TRADE

COMMERCE

The general overview of commerce does not pretend to provide details on all the subsystems; there are chapters of the design doc after this one which go into greater detail on aspects such as vendors and the commodities markets. The purpose of this document is to present the big picture of how all the various economic aspects of the game interrelate.

Vision

From the Vision doc:

Banking is traditionally handled by the large corporate entities that are much of the real power in the galaxy. Their facilities do not exist everywhere, however, and a planet must often pay in order to get access to the credit networks. Outside of the credit networks, cash must be used. For simplicity's sake, we will settle on a single universal currency, with perhaps cosmetic differences or exchange rates that are assumed and automatic and therefore are there only for fictional color.

While there will be NPC shopkeepers that supply very basic level goods for newbies, all higher-level transactions are done at player-run vendors. Players are able to hire NPCs or droids to man their storefronts for them; they can configure these vendors to buy specific types of goods up to specific quantities and at certain prices, and also configure them to sell from their stock at particular prices. Vendors have ongoing costs, of course, making running profitable businesses a sub-game in its own right. Vendors will be customizable in race and appearance.

It will also be possible to query the markets on a given planet; vendors who have signed up for the planetary commodities market for a fee will have their wares and desired purchases listed on the planetary level so that interstellar trade is facilitated. This permits space traders to easily evaluate the needs of a given planet and make business plans accordingly.

Systems Covered

- Banks and the nature thereof
- Where credits come from in the game -- quick survey of all faucets in the system
- How credits drain out of the economy -- quick survey of all economic drains in the system
- An overview of the player-driven economic factors: vendors, markets, auctions, etc.
- Whether players run companies formally or informally.
- Where goods come from.
- How goods are transported.
- How goods leave the game.
- How we handle interplanetary commerce in the initial release versus the final release.

Systems Not Covered

- Details of how you manage a vendor.
- Details of the bank interface.
- Details of how companies might work.

- The specifics of the mining->refining->manufacturing->sales process.

Vision Goals

- The game must be accessible to a broad audience.
- It should have an intuitive user interface. If the choice for initial interface is between flexibility and ease of use, we will choose ease of use, and make the flexibility an option.
- Players should feel empowered to take action against bad apples in the player base. They should never feel just like victims.
- An interface description language will allow easy addition of new interfaces.
- New strategies should come to light for the player as their play time continues.
- Player-driven content will be a key element of the game.
- There will be motives and rewards for short session play.
- Experienced players will receive special privileges (in the case of commerce, possibly a Banker or Treasurer).
- We will explicitly reward non-advancement based ways of playing the game.
- We will scatter in as many little touches that add depth as we can. Wherever possible, these touches will relate to hidden or interesting aspects of the *Star Wars* universe.
- We must encourage and support a community.
- Players need tools to shape their own experiences.
- We must encourage a sense of player ownership in the world.
- Amy Jo Kim's principles for community building:
  - We will build flexible, extensible gathering places.
  - We will design for a range of roles.
  - We will integrate the rituals of community life.
  - We will facilitate member-run subgroups.

Terms

Credits

Background information:

Within the Star Wars fiction, throughout Episodes IV - VI, the term 'credits' refers to Imperial Credits, a monetary unit in the form of electronic and hard currency. The unit is based upon the Old Republic credit and it remains in use today. Most credits are stored and exchanged via computer transactions, but there is also a hard credit currency that can be carried and physically exchanged. Everyone has a "credit chip" or card that is used for transactions. There is rarely any exchange of real hard currency.

Our approach

Within the game, 'credits' refers to Imperial Credits in both electronic and hard currency form. A hard currency is required to support Rebels, smugglers, and fringe societies. Credits are stored within the Imperial Banking System, and characters have access to their accounts through their data pads. Transactions using the data pad or through the bank account are tracked by faction-related game mechanics.

System Details

Economic Faucets

Credits enter the economy directly or indirectly through one of many 'faucets'.

Newbies

Credits enter the economy when new characters are introduced to the game world.

Resources

Resource spawning, an indirect economic faucet, creates a resource in the game that can be harvested and sold or crafted into an item that can be sold to an NPC for credits. Similarly, the resource can be sold to a PC without bringing new credits into the economy.

Loot

'Loot' from NPCs may take the form of credits or items that can be sold to NPCs, creating new credits in the economy.

Insurance

If characters are issued credits for the destruction of insured vehicles, new credits may enter the economy if another player received any loot from the destroyed vehicle.

Loans (Post Launch Feature)

If we offer loans through NPC banks, this would bring new credits into the economy. No doubt some players will not pay back loans, incurring reputation hits, but bringing new credits into the economy.

Economic Drains

Credits leave the economy directly or indirectly through one of many 'drains'.

Decay/Destruction

If dropping of hard currency is allowed or if corpses are dropped and deteriorate, then credits leave the economy. If an item is destroyed then credits indirectly leave the economy. The credit loss may be more direct if transport services are paid for but the mission fails and the mission or cargo was uninsured.

Crafting Loss

The success level or failure of crafting skills will consume resources, and therefore, credits.

Transaction Fees

Credits paid for transaction fees and taxes levied by the internal game mechanics may leave the economy for good. In some cases, credits may only redirected to another faucet.

Maintenance

Like some transaction fees, credits used to purchase or maintain certification levels leave the economy.

Imperial / Republic Property Taxes

Credits paid for property taxes leave the economy.

Equipment Maintenance

Credits paid for NPCs or resources for equipment maintenance and repair leave the economy.

Structure Maintenance

Credits paid to NPCs or for resources needed for structure maintenance and repair leave the economy.

Credits Requirements

A balance of all 'banked' credits should be available for display on a character's personal data pad at all times. The maximum credit value should be significantly large (possibly a 64-bit number) enough to handle major transactions.

The hard form of currency must be 'stackable' and possibly represented as an icon with a number field. Hard currency cannot be split up in the character inventory, but can be transferred in part to other inventories, including containers, a bank account, or to other characters via the secure trade window.

The Live team will need the ability to easily revalue and devalue currency over time. The mechanism used for this process is TBD.

Banking System Requirements

All primary locales, regardless of faction, must have access to one or more facilities that provide the following bank-like functions:

- A galactic repository for credits in a fictional bank account usable only by one character.
- A system whereby payments and fees can be deducted from or deposited to a character's bank account.
- A local repository for items in the game that could fit into a large safe deposit box. (i.e. blasters, but not a landspeeder.)

In addition, money can be distributed throughout the economy in the form of hard credits. The purpose of non-electronic currency provides a monetary system consistent with the Star Wars fiction, a risk to players wandering in unsafe locales, and exchanges that (intentionally) cannot be tracked by the faction/reputation system.

By allowing local governments to purchase a bank-like facility, we can provide a level of achievement for colonized planets.

To remain consistent with the fiction, the Imperial Bank controls all forms of electronic commerce. Any bank facility is, at heart, run by the Empire.

Imperial control includes all forms of electronic commerce, taxes, duties, levies, and fees. All commerce data should be tracked by the underlying game systems, but electronic commerce transaction data specifically will be used for any faction and reputation affects.

Trade System Requirements

The following methods of trade must be provided:

- Secure Trade
- Auction Channel
- PC Vendors
- NPC Shopkeepers
- Commodities Market

Secure Trade Window

The secure trade window must provide a reliable method for trading credits, tangible items, and intangible items between two players. To avoid scamming issues, the following rules should be observed by the secure trade window system:

- The interface should be slot-based.
- Items offered in the secure trade window should be representative only, and not the actual game object.
- Items that would overburden either party cannot be placed in the secure trade window.

Auction Channel

Among the predefined chat channels, #auction offers a place for all players to offer goods for sale in an open forum. No special features are required for this channel, though the live team can easily add features.

PC Vendors

Vendors provide an automated way for players to sell crafted goods to other players. The form a vendor takes can be any sentient species, droid, or machine.

Characters must be able to hire vendors or lease vending equipment to sell tangible and intangible items. Vendors can be hired or leased from XXXXXX. Once hired or installed, vendors have ongoing maintenance fees (commissions) based upon the items they sell. Vendors can be dismissed or sold at any time.

Players must be able to set the prices for each individual item sold by the vendor. Vendors have placement restrictions.

Commodities Market

For initial release the game will need a trading system for players to auction and purchase goods. The system must be tiered to begin with local (planetary) trade and later graduating to interplanetary trade. The initial auctioning feature set will play similarly to *M.U.L.E.* and future features will allow more web-like auctioning mechanisms including timed and Dutch auctions.

A full DDR document on the Commodities Market is forthcoming.

Economy: Player-driven Factors

Vendors

See vendors section above, or the Vendors document when available.

Markets

Local Marketplace

A Local Marketplace provides players temporary access to a permanent structure for selling their goods. These vending areas are often located centrally and will look like a market district in the style of local architecture. Players will have to pay for space leased in a marketplace. The local government may set restrictions on lease terms and fees. Local Marketplaces provide secure storage for the purpose of inventory. Vendors may also be placed temporarily in a leased location. Note: It might be possible to have vendors linked to the commodities market on planets with a commodities structure. Would that be useful or harmful?

Commodities Market

The Commodities Market is a local structure allowing players to store and post descriptions of items for sale. The storage has a maintenance fee associated with it to avoid players treating the commodities warehouse as a permanent storage facility. These fees may be associated with the highest set price for the item. All items stored in the commodities warehouse are for sale.

Auctions

Auctioning of items takes place in the #auctions chat channel. How do players respond to, pay for, and receive auctioned items? Is this planet-based?

Goods: Spawning

NPC Vendors

The lowest level of items, probably newbie in nature, will be generated to bootstrap and support the economy. This creates a small credit drain as well as a faucet for newbie goods.

NPC Loot

When killed during PvE combat, NPCs and 'monsters' will generate loot appropriate to their type, level, and location. Some resources and new items will be introduced into the economy in this manner.

PC Crafting

New items are introduced into the game when resources are crafted into items. Some or all of the resources may be consumed in this process.

Insurance (?)

(Replacement of goods lost in combat and now in another player's possession, hence creating a similar object. Perhaps only credits.)

GM Spawning

GM's may introduce goods into the economy for event purposes.

Goods: Distribution

NPC Transport

We may (TBD) provide a system for NPCs to transport goods purchased by player characters.

PC Transport

When interplanetary travel is provided, the player generated mission system must provide transport-oriented missions.

GM Transport

GMs may transport or distribute items for event purposes.

Goods: Destruction

Consumption

Resources may be consumed during harvesting, refining, or crafting processes.

Decay

An object may decay for any number of reasons, especially being left on the ground.

Destruction (Damage)

An object may be damaged to the point of destruction through combat or other damage dealing mechanism.

Expiration

Similar to decay, this is an expiration date for a given item. This is very helpful for GM event generation.

PC Deletion

Players may manually destroy an object through a game interface or world object (like a trash can.)

GM Deletion

GMs may delete objects for maintenance purposes or to wrap up events.

Interplanetary Commerce: From the Ground

NPC "Post Office", space and ground

PC "Pony Express", ground only

Player Companies

Can players run companies formally or informally? Does a company have a bank account? Can a company own property or equipment? Can a company provide salaries? What other benefits can a company provide?

Feature List

Banking Features

- ❑ Loans
- ❑ Player-run Banks

Player-run Banks

Players can colonize newly discovered planets in fringe territories by establishing a ruling body. This new government has the authority to build and maintain a bank structure, run by the equivalent of the governor or treasurer, with direct ties to either a factional or non-factional banking system. In any event, as part of the game mechanic, the controlling government must pay fees to Empire to maintain a connection to the galactic banking system.

Player Banks may:

- Charge fees for storage
- Offer interest
- Provide loans

If the local government does not maintain a player-run bank, the structure may be shut down or removed. Any stored items are automatically moved to the nearest Imperial Bank (or factional bank) and extra storage fees assessed as necessary. The deposited credits revert to a non-interest bearing account in the Imperial Bank. Any loans revert to the Imperial Bank, unforgiving and relentless in the pursuit of wealth.

In return, the bank administrator has the authority to use a percentage of the fees to pay interest, provide loans, or for other government purchases. This money can never be transferred to a personal account.

Issues remaining:

- For purposes of interest tracking, how are credits stored in player banks distinguished from Imperial banks? If fictional accounts are used can credits be easily transferred?

Trade System Features

- Auction System
- Contracts

Auction System

Provide an online trading system including term and Dutch auctions, including web hooks where possible.

Contracts (Mission System Features)

The player-generated mission system must be able to provide contract-like missions of the following types:

- Bounty Agreement
- Commodities Transaction
- Loan Agreement
- Transport Agreement

The mission system should be fully integrated with other components such as the justice, bounty, reputation, and commodities systems.

PC Vendor Features

- Vendor Presentation
- Item Presentation
- Graduated Pricing
- Haggling

Vendor Presentation

Players should be able to customize their vendor with accoutrements appropriate to the vendor's form (i.e. humanoid, droid, or machine.) The variety of visual modifications must be scaleable for future support by the live team. Modifications could include gender, hue, clothing, hairstyles, and demeanor.

Item Presentation

Players should be able to customize the way items are presented to other players with accoutrements appropriate to the vendor's form. The variety of visual modifications must be scaleable for future support by the live team.

Graduated Pricing

Players should be able to set the price of an item over a range of units sold – the price could increase or decrease based on hard unit ranges or over the life of units sales.

Haggling

To date, no game has been able to introduce a truly interactive and fun haggling mechanism. At some point we will brainstorm this feature.

CRAFTING

The SWO Crafting system allows players to create their own gear to sell or to use. Items can be constructed ranging in size from a small piece of jewelry to a starship, and all meeting the specific needs of the crafter. While lesser-skilled characters will only be able to create basic, pre-defined objects, the more highly skilled players will be able to create items that work with the resources at hand or are better in some way that the generic type. In addition, characters that succeed in designing an item don't have to build it themselves. They can then sell its design to other players in order to earn money or gain reputation. All these things allow the players to leave their mark on the world, make their jobs easier, or make a living.

Vision

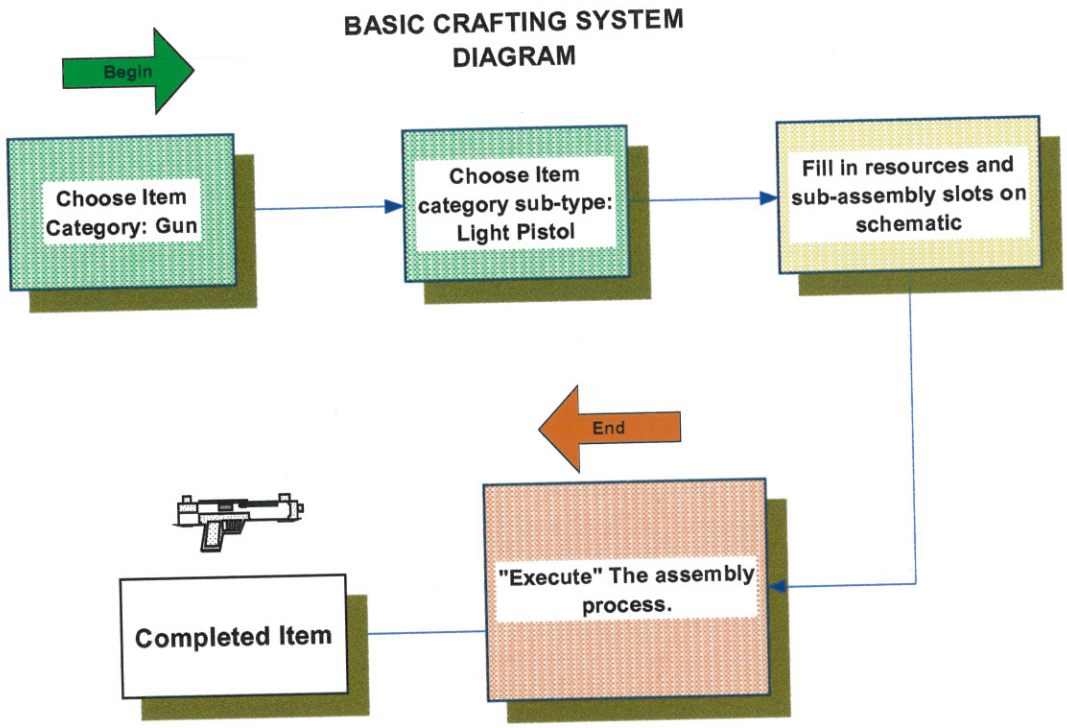
All items in the game are creatable using a simple "blueprint" system. Components are merely dragged into open slots on a blueprint interface. Different materials and components will have an effect on the final product, and when the "make" button is hit, the player's skill roll takes place, adding additional modifiers to reflect the skill of the craftsman. This blueprint is then "burned in," so that exact duplicates of that particular recipe may be made by anyone with a copy of the blueprint. Burned in blueprints are therefore a valuable commodity in themselves and can be copied and traded like any other item. A blueprint that is unique or exceptional can be named with a model name and number by the crafter, allowing players to spread their names and fame throughout the galaxy. Use of a particular blueprint may result in royalty fees being paid to the original creator of the blueprint. A blueprint may be put into an automated factory for mass production purposes. Manufacturing occurs even while the player is offline, assuming that sufficient raw materials are present in the manufacturing facility.

System Details

Core Requirements

At its heart, the crafting system only requires the ability for characters to take multiple resources and combine them in given amounts to turn them into items. All you need is the schematic for the item you want to build, and the resources to plug into that schematic. Anything more than this is extra, and unnecessary for us to have a functional crafting system.

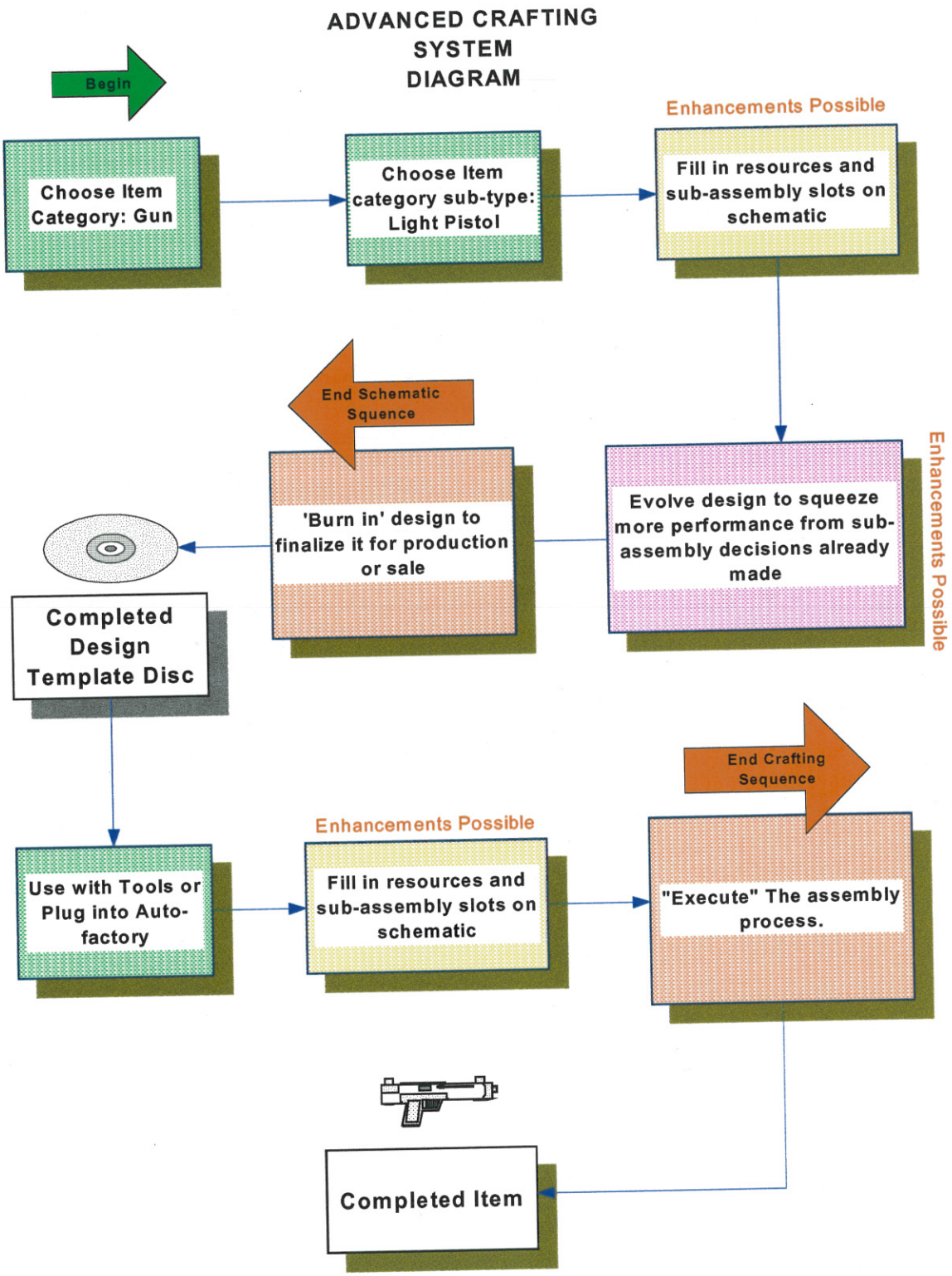
Given the time to do so, the basic crafting system can be embellished upon to turn it into more of a sub-game in order to give more game content to those players that don't want to earn their keep by blasting and killing things.



Features & Future Requirements

Advanced crafting system involves two separate sub-systems

The advanced version of the SWO crafting system can be broken down into two distinct sub-systems: the crafting of schematics, and the crafting of items. The crafting of schematics involves filling in MAD-LIB style work sheets in order to build a template that will be followed when that item is constructed. Item crafting is the actual construction of a usable, sellable, tradable item. Item construction can be done by hand or by automated factories controlled by players, and both will require the use of a completed schematic. In the advanced crafting system model, the crafting process has been split into two, distinct sub-parts with a completed schematic being a prerequisite for beginning and completing item construction.


ADVANCED CRAFTING SYSTEM DIAGRAM
Begin
Choose Item Category: Gun
Choose Item category sub-type: Light Pistol
Enhancements Possible
Fill in resources and sub-assembly slots on schematic
Evolve design to squeeze more performance from sub-assembly decisions already made
Enhancements Possible
End Schematic Squence
'Burn in' design to finalize it for production or sale
Completed Design Template Disc
Use with Tools or Plug into Auto-factory
Enhancements Possible
Fill in resources and sub-assembly slots on schematic
End Crafting Sequence
"Execute" The assembly process.
Completed Item

Schematics

Schematics supply the resource requirements and construction guidelines that spell out all the attributes of an object in a form that can be used by the players or their

factories to build that object. An item's schematic will always have a name, how complex it is, what will be needed to build the item, and what its attributes will be after it has been successfully constructed.

SWO will come pre-loaded with schematics for the construction of the basic forms of almost all game items. This means that there will be plans for the construction of a basic blaster, a basic speeder, a plain set of armor, a simple starship, clothes, medicines, sensors, and more available to the general population. Players with the proper crafting skills can take these basic plans and evolve them into items that are stronger, have more capabilities, and/or are easier and/or cheaper to build. After a character has built such an evolved schematic and burned it onto a design template disc, they are then free to build it themselves or sell it to others, or both.

Generation of schematic

Boiled down to just the basics, schematic generation involves choosing the kind of item the player wants to design, customizing the basic design to the limits of the player's skill, resources, and desire, and then 'burning' it onto a template disc. A player or auto-factory can then use the template disc to guide the construction of the item as designed. The generation of a schematic can be either a simple or an involved process taking only a minute or taking a while; it all depends on what the player wants to put into it. Although all crafting begins with the construction plans for the most basic form of the desired type of item, it can be evolved as far as the player has the will, skills, and luck to take it.

The process of generating a schematic begins with the player choosing what item they want to construct from the master item-type catalog. This catalog contains the bare-bones versions of most of the items in the game. The player is presented with all the different categories of items; then are shown all the sub-types within the category they have just selected. Once they have chosen an item to customize and construct from the master item catalog, it shows up as a schematic-generation worksheet as the most basic form of that item.

After choosing what item they wish to build, it is displayed as a schematic-generation worksheet that lists the item's resource needs in types and amounts, its attributes after construction, and how many things can be altered by the player at their character's current crafting skill level.

The player customizes a design in two ways. First, the player must make choices about what materials to use in each of the item's sub-components. After all the resource needs have been supplied, the player can then 'evolve' the design in different directions trying to get the most out of each of the item's components in different ways.

Item Sub-Components and Resources

Each schematic has a number of slots on it that represent choices the player must make about what materials to use in the item's construction. The number of slots apparent to the schematic designer will depend on the skill level of their character. A player who's character only has the most basic of skills might only see a single component slot representing resource selection for the entire item. On the other hand, a player who's character is very skilled in crafting might see as many as ten or more sub-component slots on an item's schematic.

The materials that go into these sub-component slots are the ingredients required to construct the item as it has been designed.

Resource Ingredients for Item Construction

Constructing an item requires ingredients that have to be supplied before the process can be start. The ingredients that will be required to construct an item are determined by its design schematic. Ingredients can be certain amounts and types of resources, or entire sub-assemblies. For example, a character crafting an axe might see three slots consisting of choices about what resource materials to use for building the handle, the blade, and the cutting edge. A character building a starship would also see multiple slots and while the one for the hull might ask for resource materials, the slots for the engines and weapons would ask for pre-built sub-assemblies that will have to have been previously designed built using a separate set of schematics. In addition, if the ingredients required for a sub-component are resources, those requirements can be either specific or general in nature. General resource requirements might read off as something like 10 units of metal, and 3 units of energy. An item being constructed that had more specific needs might have an ingredients list that required 10 units of steel, 2 units of Tibanna gas, and one unit of plasma energy.

Under most circumstances, a crafter with basic skills will have to keep a schematic's resource requirements homogenous in order to successfully construct an object. If a character was constructing an item made of metal and the character had 4/5 the metal requirement in copper while the rest was made up of 1/5 steel laying around, the character would be unable to construct that item until they had acquired all of the needed metal in one single type.

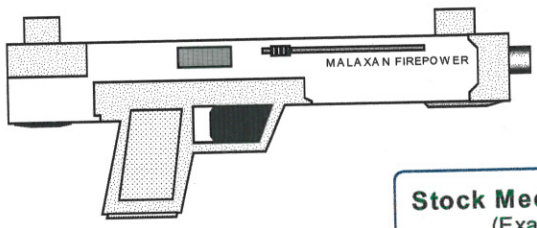
A player with a resource manipulation skill can attempt to modify their resources to meet the needs of an item. In the example above, a character with an adequate but un-remarkable metallurgy skill would be able to combine the steel and copper to meet the metal resource requirements of the item, but they might or might not inherit weaknesses in the two metals. A character with a high metallurgy skill would be able to combine the two metals in order to meet the resource requirements of the item they were constructing, as well as guarantee that they inherited only the best traits of the metals, and none of their weaknesses. Characters with varying degrees of resource manipulation skills could begin to construct items using what it available to them, or what will perceivably improve the quality of the construct.

Some of the sub-component slots on a design schematic do not have to be filled for the item to be successfully constructed. This is the case for any slot flagged on the schematic as 'non-essential'. For example, a character of significant skill that was constructing a star-ship would see a slot where they could put a shield-generator. If the ship was a non-combatant in a safe-zone, they could conceivably cut the ship's costs in resources and maintenance as well as power if they left the shield generator off the ship. The pilot that ended up flying that ship would simply want to be sure that they avoided asteroids. Slots that are flagged as non-essential are seen only in designs that are generally more complex, and are almost always no more than enhancements to the base design.

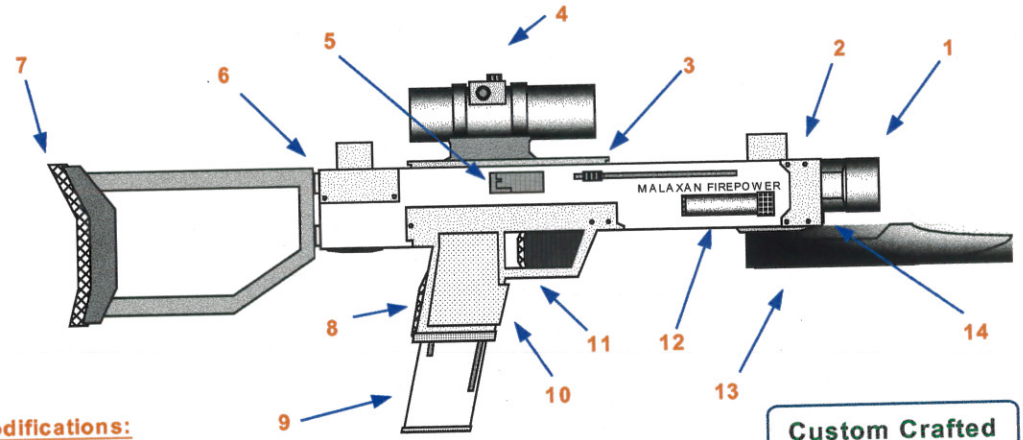
Stock versus Custom:

A study in crafting

Malaxan Firepower Repeating Blaster
(Fictional)



Stock Medium Blaster
(Example only)



Custom Crafted Medium Blaster
(Example only)

Modifications:

1 Larger Bore
Larger rounds fired for more damage capability
+ damage to target

2 Quick-Takedown Pins
Easier repair and maintenance
- repair/maintenace cost and time

3 Picatinny rail
Attachment point for sights and scopes
Attach sights in the field at less cost and time

4 Red-Dot sight
Easier and rapid target acquisition.
- aim task time

5 Two-piece bolt
The lighter bolt gives the gun a faster cyclic rate of fire.
- fire gun task time, + rounds fire in burst

6 Swing-collapse stock mount
Allows a stock to swing to one side allowing use in tight areas.
- weapon bulk

7 Skeletonized shoulder stock
Lighter stock that allows braced shooting from any stance.
+ aim accuracy when stock used

8 Larger Grip
Easier to hold firmly. Spreads recoil over larger surface area.
+ recoil dampening

9 Extended-size Magazine
More rounds are held, allowing for extended duration firing.
+ number of shots before reloading

10 Comfort package
Padding and softer grips are placed in multiple locations.
+ generic gun ease-of-use modifier

11 Adjustable Trigger
Touch up trigger pressure for more accurate shots.
+ single shot accuracy

12 Laser-Sight
Faster and easier target acquisition
- aim task time, only usable inside or in dark

13 Bayonet
Use gun as a an edged melee weapon
gun can be used in melee as edged weapon instead of club

14 Stronger recoil spring
Increases cyclic rate of fire
- fire gun task time, + rounds fire in burst

Stock Versus Custom: An example of the level of possible enhancements to a basic item. The basic blaster is easier and faster to construct, as well as requiring fewer resources and sub-assemblies.

A Crafting System Enhancement

After the schematic's resource needs have all been fulfilled, the character making the schematic has the opportunity to either build the item as is, or to try and enhance its capabilities and attributes. The process of enhancing a design schematic's attributes is known as 'evolving' it. Evolving a design is the only way to increase its attributes to take full advantage of the resources used in its construction. When a design schematic's resource needs are fulfilled, it merely means that the design is now capable of being constructed. The fact that an aluminum/steel alloy might have been used to construct a device instead of lead means nothing special for the item's attributes unless the design is 'evolved' in an attempt to take advantage of those metal's particular traits. If a design is burned in without evolving it first, the schematic's attributes are the same as its basic original form although it might have enhanced capabilities depending on the number of slots unlocked and filled by the skill of the crafter.

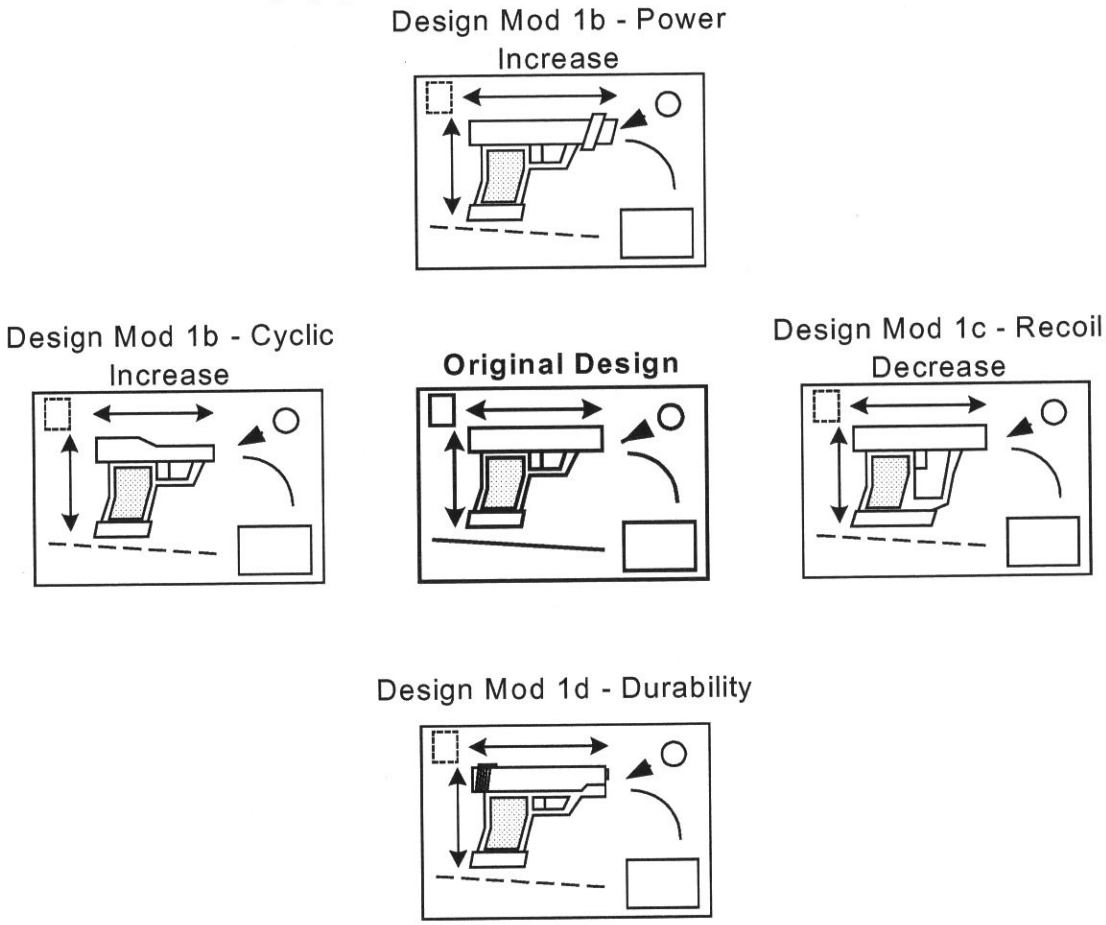
Each resource used in the construction of an item has attributes that determine things such as their power, durability, flexibility, speed, and so on. To take advantage of any possible attribute increases by using superior materials, a prototype of the item must be constructed and the prototype item must be evolved. Each time an item is evolved, its attributes will increase a certain amount dependant on the quality of the materials used and the skill level of the character doing the crafting. As a result, many items have to be evolved many times in order to take maximum advantage of their resource components. The risk in this process is that each time an item is evolved, there is a chance that the prototype will be pushed beyond its limits and damaged or even destroyed. Beyond the increasing chances of the destruction of the prototype, another reason to try and keep the number of evolutions down is that each time a design is evolved, it gets a bit harder to construct due to its complexity.

If the player does choose to evolve their design, they are presented with their basic design in the center of the screen, surrounded with representations of the different directions they can try to take their design, up to the maximum limits of the resources they used in creating it. Each one represents an attempt to change the item in such ways as to: decrease its weight, increase its durability, increase its power, etc. By selecting one of these, the design is evolved in that direction, and the game determines what the result is based upon the attributes of the resources used in the item's construction, the attributes of the base object, and the player character's skill. After the prototype's new attributes have been determined, the evolution process begins again, with the new, evolved prototype sitting the middle of the screen with different evolution directions arrayed around it. If the player doesn't like what happened in the item's evolution, they can back up one stage and try a different evolutionary path.

Each evolution task uses up a bit of the player's concentration depending on their skill level, which limits how quickly they can evolve an item. In addition, each time the item is evolved, there is a slight chance that there will be either a quantum leap or a disaster. The occurrence of a quantum leap means that thanks to great luck, the new item is master-stroke of engineering excellence and receives boosts in attributes across the board, or a major increase in one area. By the same token, the occurrence of a disaster means that the item itself has been irrevocably altered and it can't ever be de-evolved back a step in the process, or a design flaw has crept in affecting its performance, or it has been destroyed.

Once the player is satisfied with the prototype's capabilities, they burn its design onto a design template disc, during which the prototype is disassembled design

analyzed. Using the disc, the item can now be traded, sold, or built by personnel or automated manufacturing equipment.


Design Mod 1b - Power Increase
Design Mod 1b - Cyclic Increase
Original Design
Design Mod 1c - Recoil Decrease
Design Mod 1d - Durability

A possible page of iterations.

Item Evolution

Upon choosing to evolve their item, the player is presented with a page with their default item's form in the center of the screen, surrounded with possible directions to take the item. Each evolution shown indicates possible changes to the item's attributes and capabilities based upon the crafting character's skills, and the quality of resources and sub-components used.

When an evolutionary path is chosen, the player's skills and tool quality are checked, and the result is determined. Assuming that there wasn't a catastrophe, a new page of evolutionary paths is drawn up, the item's complexity is increased by one level, and the player is given the choice to continue to evolve the item, or burn the design template as is.

Item Construction

This step is built into the basic crafting process, but is its own separate sub-system in the advanced crafting model.

Item Construction requires:

- A complete schematic

- A set of resources and sub-assemblies that match the requirements for that schematic
- The tools or a factory of a level sufficient to build the schematic, however complicated it might be.

To build an item, the player must have the design template disc for the item they wish to build, all of the ingredients needed to build it, a workshop or area with the tools to actually put it together and the room for the resultant construction.

The player might have built the design template disc when they crafted their own design, or it might have been given to or purchased by them. Whatever is on the disc is exactly what the player wishes to construct.

Each design template disc has a list of what and how many resources and sub-component assemblies will be required to assemble the item on the disc. The construction process will require the types and numbers of materials as they are listed on the disc. It cannot be jury-rigged to be built with different materials. Any of the item's sub-assembly requirements are also listed on the disc. These could be entire engines, or wings, or scopes, or sensor suites, or any other pre-built component.

The design template disc spells out what the item's name is, what it is, its attributes and capabilities, and its complexity or difficulty of construction.

Once the player has possession of a design template disc with and all the requisite needs for construction, they can then produce as many copies of the item as they have the time and resources to do. This can be done manually or automatically.

To produce an item manually, the character must make skill checks and pay a concentration fee for each design slot's worth of resource placement. These skill checks and attention fees must be paid for each and every item the player creates, although they receive slight discounts for producing multiples of the same item within a limited time period.

Using an automated factory, the player can have the process of item creation handled for them. Automated factories come at various levels that dictate how complicated of an item they can create. If the item is too complicated, some auto-factories will be unable to produce it. If production does commence, item replication will continue at a set rate until the factory runs out of the requisite ingredients, fulfills its production quota, or is interrupted by something, regardless of whether the player is online or not.

The player will not have to go online in SWO just to manage their auto-factories production schedules. A moderate level of production control will be allowed the player from an interactive website. This way they can check the status of their production process and make changes in quotas without having go through the process of logging into the game and interacting with the game on that level.

Assets Required

1. Master item category and item sub-type icons
2. The schematic interface
3. The crafting interface

Revision Log

- Rev 1.1 – Changed doc to fit new template. Split details in to basic and advanced versions of crafting.
- Rev 1.2 – Altered general layout yet again. Front-end changed.

INSTALLATIONS

Installations are structures that characters can purchase and place in the game, not including housing. They almost always enable an in-game system or game mechanic of some kind. While housing will definitely play a huge role in populating the world with interesting structures and giving players locations to conduct business and store belongings, installations fill in the gaps in structure types not covered by housing and all that it entails. Examples include mines, refineries, factories, large hangars, turret emplacements, minefields, and just about everything in between.

Vision

The basic design for the facility is meant to work for the overall design of SWO and aid it in accomplishing its goals as spelled out in the SWO Vision Document. Specifically, the Installation System tries to satisfy the following goals, extracted verbatim from the Vision Document:

Issues for Newbies

- It should have an intuitive user interface.
- It should be possible to play a satisfying game session in less than an hour.
- The play environment should be customizable so that the players can change it to suit.

Technology issues

- A high degree of customization for both players and ships is a key requirement.

Retention

- New strategies should come to light for the player as their play time continues.
- SWO must provide multiple ladders of advancement so that new ways to play the game become apparent over time.
- Player-driven content will be a key element of the game.
- There will be motives and rewards for short session play.
- The game system will encourage specialization.
- Players should have to work to remain at their current level of achievement.
- We will explicitly reward non-advancement based ways of playing the game.

Gameplay issues

- The game must satisfy each of Bartle's Four: Achievers, Killers, Socializers, and Explorers.
- We will scatter in as many little touches that add depth as we can. Wherever possible, these touches will relate to hidden or interesting aspects of the *Star Wars* universe.
- The player must feel smart.

Social interaction

- We must encourage and support a community.
- Players need tools to shape their own experiences.
- We must encourage a sense of player ownership in the world.
- Amy Jo Kim's principles for community building:
    - We will design for a range of roles.
- Characters will be similar in power, but will gain more capabilities as they advance, so that players of disparate levels can fruitfully group together.

Terms

I use "Installation" and "Facility" almost interchangeably.

System Details

Core Requirements

In order to make the Facility and Installation system work on its most basic level, we will need the ability to select, purchase, place, operate & manage, and maintain installations.

Selection of Installation to place

There will be a great many types of installation available to players. Their availability will be dependant on the planet type, local environs, and the character's skills. For example, a player in the middle of a desert would be unable to purchase and place a hydroelectric generator, and a player with low-grade crafting skills would be unable to purchase a Level5-advanced automated factory.

While choosing an installation, a player will need to cater their decision to what they need the installation to do, such as mine a particular kind of ore, condense water from the air, breed Taun-Tauns, grow crops, defend an area from hostiles, generate power, or whatever. Also, the player will want to look at the installation's estimated regular maintenance fees to verify they are within their price range, and if they have enough power to operate the structure or will have to purchase a power generation facility to power it for them.

Purchase of Installation

Installations will be acquired through all normal means of purchase and these will vary depending on if the character is buying from an NPC or another player character. Like most all other things in the game, installations can be purchased with credits, bartered for, or given as rewards for some other reason.

Placing Installations

Once a player has purchased an installation they must place it on the ground. This is done in almost exactly the same way as it is for housing, with the caveat that there are a couple of additional restrictions to facility placement that aren't present for housing.

Just to touch on the topic, housing and installation placement both require a player to manipulate the structure to be placed and position it in the location on the ground that they desire. The map might be zoned in such a way as to allow constructing houses in some areas and commercial and/or industrial facilities in others; this will vary. Land is utilized in 8mx8m increments, with each character allotted only a certain number of 8x8 plots per character, per shard, per account, on top of the cap on the maximum number of plots that can be in use on a planet at one time. Some larger structures will require the use of multiple adjacent plots simultaneously and this will eat into the character's plot allotment quickly. By being given an allotment of plots to use, players can set up multiple mining or harvesting facilities in semi to very distant locations where they might be the more lucrative, as opposed to having to place them all in one big cluster.

In addition to having to worry about the possibility of zoning and lot-placement/selection issues, installations also require that players be aware of the terrain-appropriateness of the facility they are placing. For example, a solar-cell array couldn't be placed in a cave and a hydro-electric generator couldn't be placed on dry land.

If the player is placing a resource harvesting structure, they will want to be sure to assay the area or do other investigation and attempt to place the facility on top of the richest concentration of the resource they plan on gathering. Resource assay information can be obtained from other players, or by using certain equipment and/or skills that are unrelated to the installations themselves.

Power is another consideration when placing facilities. If the character's home is part of a city that has its own power generator and power grid, and the player has no qualms drawing from it, then installations can be placed close to the characters home and the player can pay for the power that they use. If the player doesn't want to hook their new facility up to the city's power grid and pay utilities or if they aren't citizens of an enclave, then they'll need to supply their own power. If the player already has their own generator and all their current facilities still leave it with surplus power, then the player can operate their facility normally. If this is not the case, then they'll have to purchase some new means of generating additional power.

Finally, heavy-duty industrial facilities such as mines, factories and the like have an effect on the immediate world around them. These industrial facilities themselves are hardened against the kind of pollutants, vibration, and environmental conditions that most residential structures are not. One reason for this is that often, largish industrial structures are partly to blame for these conditions in the first place. As a result of this, industrial facilities placed next to residential structures will cause the maintenance costs of nearby the residential structures to rise.

Operating and Managing Installations

Almost all installations are 'closed boxes' that characters cannot enter or walk around inside. As a result, the functionality of a facility will usually be managed from a facility management screen on the character's PDA. This screen will allow players to monitor the power deficit or surplus of an installation, as well its rate of harvest or mining, any target engagement parameters, or any other functions that allow or require player input.

Beyond just managing the settings of an installation, some common installation interactions will require direct access by someone present at the site. Some examples of this include emptying the ore storage bin of a mining facility, emptying the completed item locker of an auto-factory, or loading more coal into a fossil-fuel powered generator.

Just like housing, installations will allow the use of access lists so that not only can a character operate their own equipment, but their representatives can as well. These access lists can have limitations placed upon them that include such things as level of access, amount of access, and times or longevity of access permissions. There are many reasons for allowing others to access your facilities. A player might need for members of their guild to be able to utilize a facility you are currently dedicating to the guild's cause. In a different situation, you might need to allow people your character has contracted to haul away the ore that your mine is digging up to unload its ore storage bin without requiring you to be present. In both these cases, players will need to be able to grant

carefully controlled permission to run or to access their facilities to others, and the installation access lists allow this.

Maintaining Installations

Once in place and operating, installations will require upkeep in order to keep them operating at peak efficiency and to avoid their degradation to the point where they cease functioning. Some of this maintenance might be performed by actual skill use, but a great deal will always be done by paying maintenance fees. This takes into account the cost of intangibles involved in the upkeep of the equipment.

If maintenance falls behind, the efficiency of the involved equipment falls. In the case of mining, harvesting, and manufacturing gear, this means that they don't harvest or produce at the rate they would if they were fully operational. In addition to this, their maintenance costs begin to rise, as the cost of maintaining a decrepit piece of machinery is higher than that for something in 'like-new' condition. If the fees are continuously ignored, the equipment will eventually fail and cease to operate.

Chart 1: The effects of not staying on top of facility maintenance fees.

Paying maintenance is critical to proper facility operation. Although you can miss or under-pay a fee or two, not only are all the unpaid maintenance fees cumulative, but they increase in amount the longer you go without paying them.

At the same time the maintenance fees are stacking up, the facility is doing less and less work. After missing regular maintenance once, the facility operates at around 90%. After two missed maintenance cycles, it operates at 70% efficiency. After three, it is at 30%. This continues until the installation fails. Having a higher-grade facility can slow this trend or lessen its affect, but it is still present. (See Future Requirements for notes on differing grades of facility.)

Features & Future Requirements

Economies of scale

The presence of large numbers of a particular type of installation in proximity to one another bring into play what can be called 'an economy of scale'. This means that the presence of more equipment of a particular type implies the abundance of the behind-the-scenes gear and personnel to service it.

The idea of economy of scale for installations works for both individual characters and municipalities. For example, a character that owns a whole bunch of solar cells that are positioned close enough to form a large array will receive a slight bonus on the power the cells produce, and a slight discount on the maintenance fees to keep them operating. By the same thinking, a city where the majority of installations are water vaporators will cause all of its citizens that operate water vaporators to gain a slight bonus in water harvested, and a slight decrease in the maintenance fees on a per-unit basis.

The idea of economy of scale should serve to encourage character and industry specialization on both a per-character and per-municipality basis. This means that not only will the idea of residential, commercial, and industrial zoning serve to organize cities, but the economy will now be a driving force as well.

Grades of Facilities

Like many other things in life, most facilities of a particular capability might be 'equal', but some are more equal than others. Characters can purchase (or produce, with the proper skills, resources and equipment) higher grades of a particular facility. This means the possibility of slightly increased efficiency, such as slightly higher yields in harvesting facilities. It also means slightly lower costs in default maintenance fees, as computed before economy-of-scale benefits are considered. To top it off, higher-grade industrial facilities are often cleaner to operate and less environmentally disruptive than lower-grade industrial facilities. This means that placing a higher-grade industrial facility next to residential structure has less of an impact on the residential structure's rising maintenance fees that it would otherwise. The other side of the equation is that higher-grade facilities command a significantly higher purchase price and/or higher grade or resources required during their construction.

Facility Upgrades

Facilities are made up of component parts just like other assemblies in the game. Depending on how in-depth the crafting system has been implemented, this could mean that individual sub-assemblies of facilities could be upgraded under certain conditions allowing players to evolve their equipment as their skills, resources, and wealth increase. Beyond the factors already listed, the facility's overall rating and type will determine to what level it can be improved, and what sub-assemblies can be swapped out without having to trade in the whole facility for a larger or more capable unit.

Facility Repairs

Depending on to what extent factional conflict or creatures and environmental factors are allowed to affect a player character's structures, it may be possible to disable or even destroy a character's facilities.

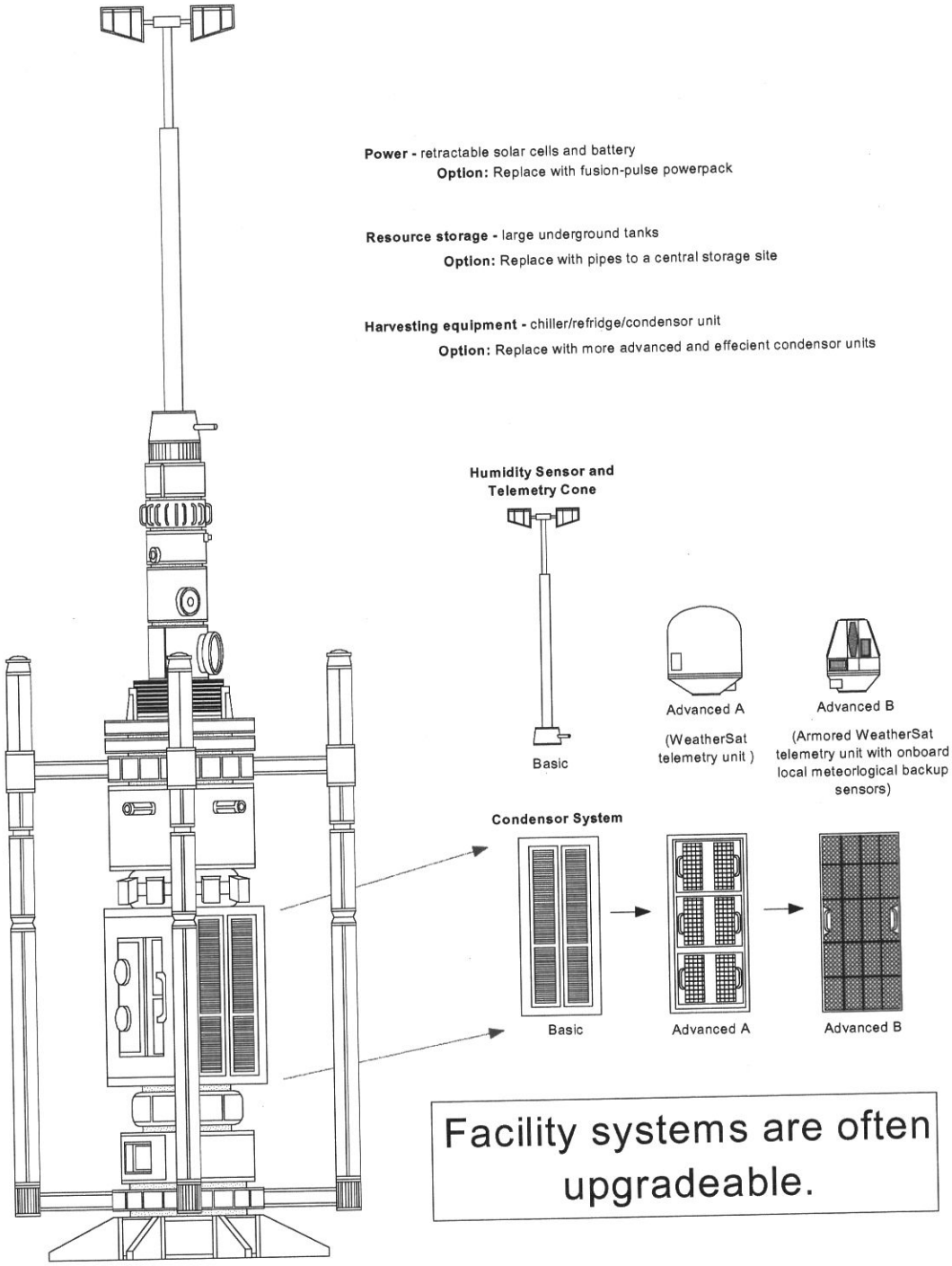
Since an installation occupies the land it sits upon, it prevents other facilities from accessing the resources it is utilizing. In factional conflict, part of taking land and occupying it might include capturing an enemy's facilities or replacing them with your own. If this is the case, it should be difficult and time consuming to do, since facilities signify the investment of time and wealth on the part of a player character. Rather than simply destroying them wholesale, facilities will more often take damage on a piece-meal basis.

As installation components take more and more damage they work less efficiently and cost more to maintain, finally failing completely and requiring replacement. Repair and replacement of a facility's components will utilize the crafting system and will require the participation of someone with the appropriate skills and tools.

Customization of Facilities

Facilities will come in standardized forms that will roughly match the environs they are being used in. Facilities being used on a planet in an extremely harsh environment will look differently than those used on a planet with a very moderate environment. Beyond that, players will have the ability to change some of the architecture and look of facilities based upon local architecture and personal taste. Examples might include a chain-link fence with privacy strip inserts or an anti-personnel gun turret like those seen in the Hoth battle, but painted in a woodland/splinter-camouflage scheme.

Pretormin Environmental GX-8 Water Vaporator


Power - retractable solar cells and battery
Option: Replace with fusion-pulse powerpack
Resource storage - large underground tanks
Option: Replace with pipes to a central storage site
Harvesting equipment - chiller/refridge/condensor unit
Option: Replace with more advanced and effecient condensor units
Humidity Sensor and Telemetry Cone
Basic
Advanced A
(WeatherSat telemetry unit)
Advanced B
(Armored WeatherSat telemetry unit with onboard local meteorlogical backup sensors)
Condensor System
Basic
Advanced A
Advanced B
Facility systems are often upgradeable.

Interface

Interface should be as simple as possible, and might take a cue from RTS games. Facilities are chosen by scrolling through a filterable, categorized listing and then placed using a mouse to drag its ghosted outline over the ground in the player's vicinity until a valid locating is indicated by a color change on the ghost image.

There should be a master facility-management page on the player's PDA that shows general statistics for each of their facilities such as whether they are sufficiently powered or not, what efficiency they are operating at, if their maintenance is up to date, how full any harvesting gear's storage hoppers are, etc. By double-clicking on any of these info-bytes, the player can then see a more detailed-presentation on all of the facilities statistics and its condition. While it is possible that the character may actually have to visit the structure of the facility to access some of its capabilities and settings, as much as possible should be controllable from the PDA.

Assets Required

General facility types listing:

- 3 levels of moisture harvester (air condensor/water vaporator)
- 3 levels of liquid mining (pumps/wells)
- 3 levels of ore mining type 1
- 3 levels of ore mining type 2
- 3 levels of ore mining type 3
- 1 horizontal ore mining facility type 1
- 1 horizontal ore mining facility type 2
- 1 horizontal ore mining facility type 3

- 1 type submerged of ore mining type 1
- 1 type submerged of ore mining type 2
- 1 type submerged of ore mining type 3
- 1 type submerged of horizontal ore mining facility type 1
- 1 type submerged of horizontal ore mining facility type 2
- 1 type submerged of horizontal ore mining facility type 3

- 3 levels of hydro generator
- 3 levels of fossil-fuel generator
- 3 levels of wind generator
- 3 levels of photo-bio power generator
- 3 levels of fusion/ion power generator

- 1 type submerged of hydro generator
- 1 type submerged of photo-chem power generator
- 1 type submerged of fusion/ion power generator

- 3 levels of class a creature ranch
- 3 levels of class b creature ranch

- 3 levels of class a flora farm
- 3 levels of class b flora farm

- 8 levels of guns and gun emplacements
- 3 types of fence 3 pieces each type. (straight, corner, gate)
- 3 types of wall 3 pieces each type. (straight, corner, gate)
- 4 types of 10x10 minefields (a couple of different densities (built using mines listed in weapon doc/ some buried, some sitting on surface))

Art for any installation management screens.

Revision Log

Rev 1.0 – Initial pre-release release

Rev 1.1 – Pulled out the entry for municipal upgrades. Added Maintenance fee diagram. Additional detail added to selecting, placing, and operating facility subsections. Fleshed out system assets with guesstimate facility category list. Added Vaporator Uprade diagram

Rev 1.2 – Added a note about the effects of an Industrial facility's proximity has to residential structures under Placement. Added same under Grades of facility. Small changes to notes about plots and zoning under placing an installation. Some general polish.

Rev 1.3 – Changed mention of 10mx10m lots to 8mx8m lots under Placing Installations.

ITEMS

The purpose of this document is to define the basic requirements for items, both tangible and intangible. The functionality described below is meant as example and is not an exhaustive list of all item behaviors.

Vision

The item game mechanics must provide the means to pick up, drop, wear, equip, eat, lock, lock down, open, close, and destroy items. Some items must have properties to limit dropping or exchanging them. Some items must be able to block movement and/or be invisible from players. Weight, volume, and equipment slot limitations must be provided. Some items must also decay based on where they are stored. Finally, items must have attributes related to color, translucency, hit points, and possibly armor or damage type related information.

- The game should offer a sense of discovery.
- The game should have secrets and lore to it.
- We must encourage a sense of player ownership in the world.
- Player-driven content will be a key element of the game.
- A high degree of customization for both players and ships is a key requirement.
- The advancement model will be more character-driven than equipment driven so that changing equipment does not change your capabilities radically.
- No one profession, specialty, or skill will be optimal—we will use "rock-paper-scissors" techniques to balance differing capabilities.
- It must be easy to extend and add content to the game after ship.
- We must have technology that allows expansion of the game dataset for minimum cost after launch.
- The game must be built to be reusable even if no such plans exist; this will ensure that Live support will be easier.
- We must have full support for localization, including Unicode support on client and server.
- The hard drive footprint should be minimized.

Terms

Tangible Items

Any item that can be placed in the world, worn, equipped, picked up, dropped, or placed in the General Inventory (pack) of a character. The object may or may not have an appearance (such as a trigger volume).

Intangible Items

Any item that is stored within a character's PDA as a data item, such as Money, Deeds, News, Notes, Books, Schematics, and Maps.

Other...

Refer to the Scripting Language document for other terms, i.e. *attributes, properties, scripts, objvars,* etc.

System Details

Tangible Item Examples

These are examples of tangible items in the game.

- Player Character
- Special Effect
- Non-Player Character
    1. NPC
    2. Vendor
    3. Guard
- Vehicle
    1. Ground
    2. Space
    3. Water
    4. Projectile
- Clothing
    1. Armor
    2.
- Light
    1. Brightness attribute
    2. Hue attribute
    3. Weapon
    4. Missile
    5. Melee
- Resource
- Container
    1. Chest/Pack/Bag/Sack
    2. Safety Deposit Box
    3. Inventory
- Structure
    1. Building
- Ammo
- Inanimate Objects
- Portal / Viewscreen
- Trigger Volume
    1. Ambient Sounds

Intangible Item Examples

These are examples of intangible items in the game, most of which will be available through the character's datapad.

- Credits (money)
- Schematics
- 'Books' (text items)
- Deeds
- Maps
- Mail/News/Notes

Blocking

Tangible Items will have a value or flag to indicate whether the item is passable or impassable. GM's can pass through items regardless of this flag. GM tools should allow filtering out and/or highlighting items with this flag. Items that can be picked up, carried, and dropped by players should not be blocking.

Destroy Permissions

Items must have a permission level for being destroyed. Minimally, item permissions should distinguish between allowing Player Characters, Non-Player Characters, or GMs only to destroy an item.

Q: How does this interact with Decay? If the Item has a decay time and is only destroyable by GMs, will it be destroyed when it decays?

Decay

All tangible items should have a decay timestamp; a value containing the expiration time for the item. When the game time is equal to or greater than this expiration time, the item and any decayed items within are destroyed.

Items lacking a decay time or flagged as indestructible may be dropped onto the same location as the decayed container. Items flagged as non-droppable will

Q: How do we decay items in the bank, such as term-limited quest items, while limiting decay of other normal items?

The timestamp for decay is reset any time the object is accessed or transferred. Additionally, container decay will be reset when any item is dropped within it.

Hover Text / Description Text

Some attribute, property, or script will be required to handle displaying text when the mouse cursor hovers over the item. Similarly, a way to display more detailed text will be required: including the display of named item text when the item is examined more closely (ref: Interface). This process may be handled on the client, server, or both, depending on the interface and item attributes/properties.

Non-Droppable Items

Items that are flagged as non-droppable **can only be transferred between a character's Inventory and Bank**, and cannot be transferred anywhere else either individually, in a group, or via any dropped container. Items flagged as non-droppable can be destroyed unless permissions indicate otherwise.

Visibility

Tangible Items will have a value or flag to indicate whether the item is visible or invisible. GM's can see all items regardless of this flag. GM tools should allow filtering out and/or highlighting items with this flag.

Other Attributes

These are some of the other *attributes* that will be supported by items or various classes.

- Height (Needed?)
- Hit Points (HP)
- Hue
- Inventory Volume
- Translucency
- Weight

Other Properties (Mutators)

These are some of the other *properties* that will be supported by various class objects. These are things that override or enhance the default event response/behavior of an object.

- Food
    1. Nourishment
- Lockable
    1. Lock State
- Crafter's Name/ ID
- Owner / ID
- Enclosure
    1. Open/Close State
- Protected
    1. Text Password
    2. Voice Password
- Special Name (eg sword of truth)
- Poisoned

Interface

The interface for item handling is described in the documents on Inventory Management, Secure Trade, Cameras & Controls, Ground Interface, GM Tools, and Skills Trees where related to item identification and crafting.

RESOURCES AND MATERIALS

All items in the game are comprised of Materials harvested from the raw and renewable Resources in the Star Wars universe. Raw Materials exist in both space and ground in various forms, and are harvested with structures relevant to the harvesting operation. The basic equipment for harvesting resources will always be available through NPCs. New resources with a variety of attributes and rarity can be discovered and even named by players.

Vision

- Provide an expanding variety of *raw materials* in limited quantities, spread throughout the galaxy on planets and in space.
- Provide different methods, equipment, and character skills for harvesting resources.
- Provide opportunities to own, harvest, trade, and utilize resources.
- Provide a way to craft finished goods from raw materials.
- Provide raw materials with a balanced range of properties that may affect statistics, presentation, and potential value.

Terms

Chunk Egg

The term chunk egg is used to describe a map volume and its associated resource and trigger data. In the context of resources, a chunk egg may contain data about the resources generated by the volume.

Resources

A resource is any game component that can be harvested from a renewable store on a planet or in space. This includes Water, all forms of Energy, as well as Minerals, Flora, Fauna, Raw Foods, Chemicals, and Gases.

Materials

NPCs

Structures

Harvesting

Crafting

Overview of System Details

Resource Classes

The resource classes that exist include Water, Energy, Minerals, Organics, and Chemicals. Examples of these raw resource types are listed below.

Water
Energy: Solar, Geothermal, Nuclear, Wind, etc.
Minerals: Ore, Gems, Silicate,
Organics: Animal Biomass, Plant Biomass
Chemicals: Bacta (plant biomass?)

Resource Harvesting
Raw resources are harvested from space or ground

Interface

PCs interact directly with harvesting equipment while on site, utilizing interfaces provided for each structure through a console. Harvesting structures indicate their type

Food

Terrain attributes, properties, and data are stored in 'Chunk Eggs' associated with a volume of planetary terrain.

Materials with the Food property should provide a balanced boost to attribute pools – Health, Action, and Concentration. Food should also have a Flavor value.

Minerals, Biomass and Materials have a variety of characteristics, some in common and others based on type.

The Food property can be applied to any object, though its application will almost certainly be limited to food type game objects and/or materials derived from harvesting certain resources.

Food provides Nutrition, a value that varies with the efficacy of the Food object. When eaten, Nutrition is applied to the Character Attribute Pools (CAPs) in balanced amounts.

Foods have Flavor, a value that may also affect how Nutrition is applied.

Medicine
Some forms of Nutrition may temporarily *raise* the value of the CAPs *beyond the maximum range.*

Poison
Some forms of Nutrition may temporarily *lower* the value of the CAPs.

Overeating
Eating Food when Full (a state TBD) may reduce the Action Pool.

Flavor
The Flavor value could be comprised of Salty, Sweet, and Bitter values – a concept based on the power of three.

Resource Placement

All Resources in the game are considered renewable. Some resources require ongoing costs to maintain. Arid farmland requires water.

Resources come from the environment or other resources.

Chunk Eggs

Energy Yields
Climate

Notes

Notes from Haden

Bacta = Gelatinous, red alazhi + kavam bacterial particles + colorless liquid ambori

(Note: Bacta allergies affected millions of people, especially from the Imperial Center.)

Tibanna gas

Adegan crystals (also Ilum; most potent called pontites.)

Base Resources

1. Water

Water

Two kinds of water resources exist, natural and refined. Bodies of natural water include rivers, ponds, and lakes. Refined water is gathered using a Moisture Vaporator, Condenser, Purifier, or similar water harvesting structure.

In its natural form, water is one or more values located in a chunk egg.

This is the amount of water that can be harvested from the air.

This is the amount of water that can be harvested from the land.

This is the amount of water that can be harvested from the ground.

The water values that exist in the chunk egg affect harvesting and spawning.

Once harvested, refined Water is required in a number of game operations, including crafting, mining, farming, ranching, etc.

The amount of time it takes to refine water depends on the Quality of the water. Swamp water takes more time that saltwater, which takes more time than lake water, which takes more time than groundwater, etc.

Harvesting water on Tatooine with Moisture Vaporators is time-consuming and costly, but demand for water is much higher. Harvesting water on Dagobah is time consuming because the water needs more purification; however clean water is also plentiful.

Resource Systems

Resource Templates
Predefined Resources
Permanent Flag
Usable Resources
Duplicate Checking
Archival Resources

Resource Attributes

Weight

Resource Placement

Resources and values related to Resource Growth are located in individual chunk eggs.

Chunk egg contains Fertility, a value that is either:

a) a value indicating farming fertility in a chunk region, or
b) an aggregate of several values, such as energy, nutrition, etc.

Chunk Egg:

Climate = Solar Energy + Moisture + ??
Fertility = Climate + Flora Nutrition
Flora Encounter Data
Fauna Encounter Data
Combat Encounter Data
Flora Growth State
Climate

Ranch

Multiple input (requirements), single output (configurable).

Input: Cow Output: Meat or Energy or Hide

Breeding?
Quality changes over time?

Farm Concept

Fauna Characteristics

Ideal food type and style that it desires.

Food yield array

The spawning routines take proximity to buildings into account. The closer to a human population the spawn event is, the less likely the fauna is to actually spawn there.

Food Characteristics

Nutrition, Flavor
Nutrition: Strength
Calories: Action
Flavor: Concentration

Material Characteristics

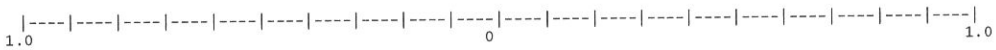
Absorption	vs.	Reflectivity
Conductivity	vs.	Insulation
Hard	vs.	Soft
Inert	vs.	Reactive

Mineral Characteristics

Rare	vs.	Common
Energy Yield		

Organic Characteristics

Food Yield
Energy Yield
Crafting Yield



- Predefined materials only get X points to spend.
- Discovered materials get X to X + Y (ex. 70 vs. 70 to 100).
- Cost to mine directly related to the number of points in the material.
- If you publish a new resource, you get reputation points.
- Resource characteristics should be viewable through skill, profession, or guild affiliation.

Density		
Volatile		
Rigid	vs.	Flexible
Resilience	vs.	Brittleness
Ablation	vs.	Durability
Durability	vs.	Fragility
Conductivity	vs.	Energy
Durability	vs.	Concuss
Resilience	vs.	Blunt
Tensile	vs.	
Brittleness	vs.	

Refined Material Modifiers
Energy, Metal, Wood, etc.

Non-Damage Attacks

Poisons and Sickness are non-damage scripts attached to the target that affect a variety of Character Attributes over time.

Resource Yield

Carnivore Meat
Herbivore Meat
Fish
Fruit
Vegetable
Wheat
Water
Energy
Hide
Grain
Plant Biomass
Animal Biomass

Resource Template

Stores the template for a resource containing values and random ranges for resource attributes, characteristics, and yields. These tables are used to generate new resources that are named and stored in the Resource Database.

Resource Database

Contains the name, attributes, characteristics and yields for each named resource type.

Damage Types

vs. Blunt
vs. Pierce
vs. Slash
vs. Concuss
vs. Energy (types? Heat, Cold, EM, Blaster, Stun?)
vs. Acid
vs. Biological
vs. Chemical
vs. Lightsaber

RESOURCES

The purpose of this document is to outline the Resources system and its components.

Vision

From the Vision Document

Beyond standard resource types offered by the Star Wars universe, we will make use of an extensible template database that allows players to discover new minerals and resources. These resources types will be derived from base types, with minor modifiers, and players will even get to name the new materials. Resource mining will exist for all types of terrains, and possibly in space as well. Gas mining (a la Cloud City), moisture farming (as on Tatooine), and mining for minerals and other resources will all be possible. All resource mining will be a passive activity that occurs while the player is offline as well as while they are present; we will use timestamps to calculate elapsed time between visits and to roll a few random events that may have affected the resource mining devices in the interim.

- The game should offer a sense of discovery.
- We must have technology that allows expansion of the game dataset for minimum cost after launch.
- The hard drive footprint should be minimized.
- It must be easy to extend and add content to the game after ship.
- There will be motives and rewards for short session play.
- We will scatter in as many little touches that add depth as we can. Wherever possible, these touches will relate to hidden or interesting aspects of the *Star Wars* universe.
- Players must frequently feel rewarded.
- The game should have secrets and lore to it.
- There must be a sense of exploration.
- We must encourage a sense of player ownership in the world.
- Amy Jo Kim's principles for community building:
    - We will design for a range of roles.

Terms

Resource Class

A major Resource category such as Metal having a particular data set relevant to all resources in the class.

Example: Metal has a Hardness attribute.

Resource Template

A Resource Template is a classed data set of pre-defined and balanced ranges used to randomly generate new Resource Types.

Example: MetalTemplate[n] has a Hardness range between 10 and 20.

Resource Type

A Resource is a classed data set that can be associated with a chunk egg or object through a Resource Property such as Production or Consumption. This may or may not refer back to the Resource Template it was generated from (TBD.)

Example: Iron is a Metal with a Hardness value of 17.

Resource (or Resource Property)

A Resource is a property containing a Resource Type and data relevant to the property - almost always a quantity, max quantity and other values. A resource is associated with an object or Chunk Egg through a resource property such as Production, Consumption, Shelter, or Desire.

Example: A chunk egg for an Iron mine might act somewhat like this:

Property: PRODUCTION
Resource: 'Iron'
Current: 10
Max: 100
Regeneration: 25

Based on the representation above, this chunk egg would produce up to 10 Iron units of the Iron Resource when harvested. The resource would regenerate 25 Iron units every 'resource cycle' up to the maximum of 100.

The above example is *highly simplified* and does not currently account for dynamic, non-renewable resources, as our future system will.

System Details

As described in the Terms section above, the Resource system utilizes Resource Classes, Resource Templates, Resource Types, Resources, and chunk eggs to promulgate natural resources throughout the game universe.

Resource Classes

Each raw resource will naturally fall into a category befitting the purpose, and therefore attributes, of the resource in the game. The Resource Class categories thus far are:

ENERGY	WATER	METAL	GAS
• Solar	• Ice		
• Geothermal	• Humidity		
• Radioactivity	• Water		
• Wind	• Groundwater		

• Hydro • Fossil • Biomass • Tidal			
CRYSTAL	FRUIT	VEGETABLE	MEAT
SPICE	HIDE	WOOD	STONE
BONE	CLOTH		

The nature of some categories is decidedly general. Energy, for instance, comes in several varieties and can be applied to chunk eggs with very little conflict. When harvested by the appropriate harvesting structure, they all produce Energy in varying amounts. Like Energy, Water comes in several forms, but is still Water when harvested. Unlike Energy, there is no refined form for Water, but is used for many crafting operations.

Some categories, such as Cloth or Plastic, may seem very specific. The final categories may simply indicate the final form of the resource once it has been harvested and refined. To a player, Cotton may start out in plant form but is considered Cloth because it takes the form of cloth when refined, and often clothing when used in for crafting.

Resource Class categories still under consideration are:

AIR	GLASS	GEM	LIFE CRYSTAL
PLASTIC	CARBONITE	CHEMICAL	FUR
GRAINS	RUBBER	SILICON	SALT
BIOLOGICAL			BACTA?

Bacta may be broken down into sub-components, as will many other resources in the Star Wars universe. This may give players the opportunity to craft (and sell) Bacta and Bacta-related items.

Resource Templates

Resource Templates define the seed ranges and attributes for individual Resource Classes. The data should include minimum and maximum values for each attribute, and possibly cost per unit ranges as well. The following example illustrates how attribute ranges work; the attribute names are not final, nor should the overall functionality of armor or durability be derived from the example.

Example:
Resource Class 'Metal', #1
Durability: 50-75
Armor: 15-35
... ...
Resource Class 'Metal' #2
Durability: 10-20
Armor: 60-90
... ...

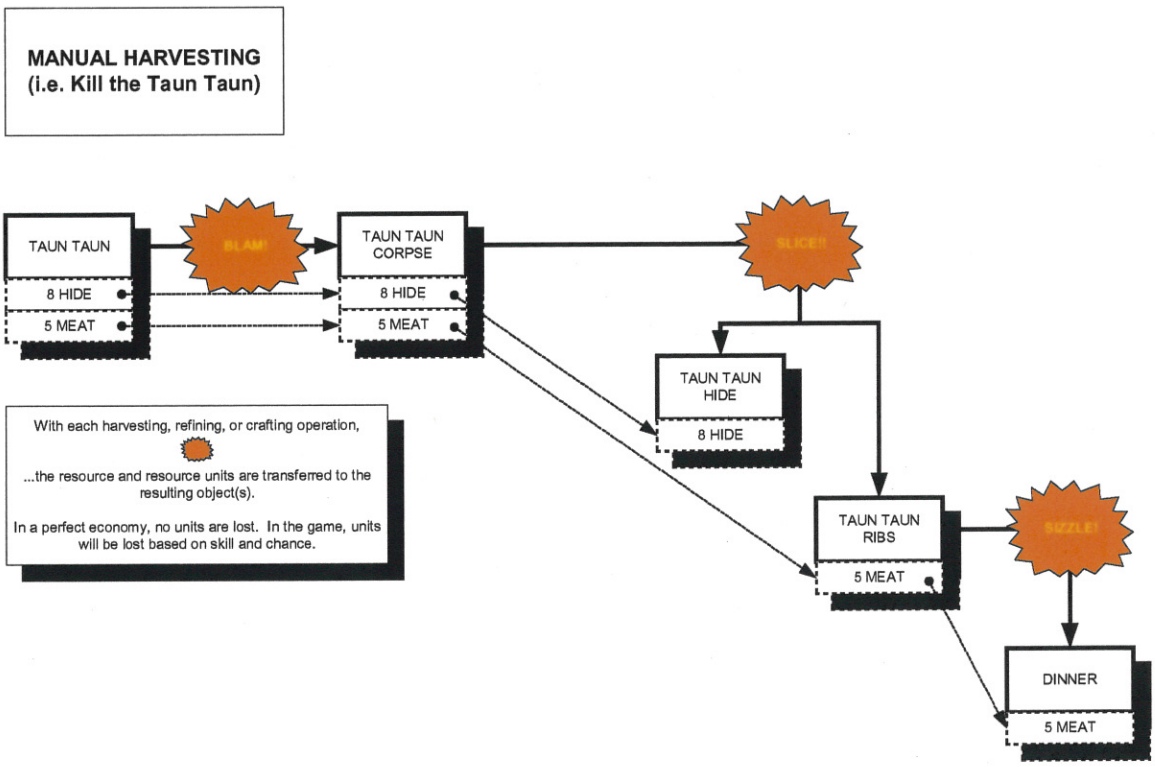
Resource Processing Overview

Example: A Chunk Egg contains 100 units of the Metal called 'Iron'. A number of units (X) of the resource are extracted using a Harvesting Structure into a target object. The Target Object now carries X units of resource.

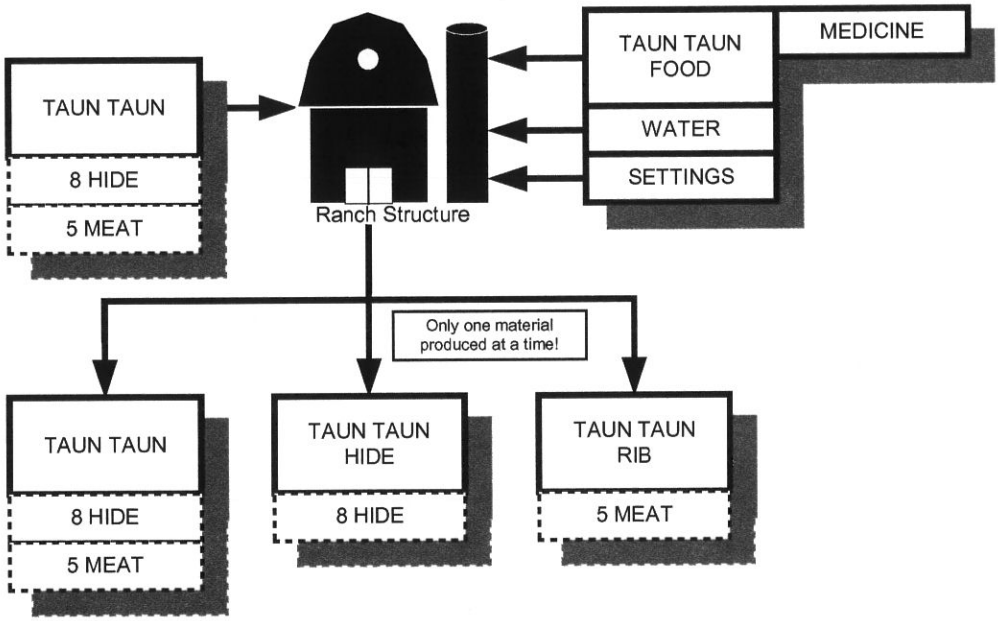
For the sake of clarity, the Harvesting Structure is probably an 'Ore Mine', and the Target Object could be 'Pile of Ore', 'Ore Cargo', or 'Ore Crate'...whatever. In any case, the Pile of Ore now contains X units of the Metal resource. The resource units are reduced on the Chunk Egg, but even if the number units reaches zero, the resource is not necessarily removed. Resource units may be 'lost' during harvesting, reducing the number resource units in the chunk egg by more than the units actually produced.

Example, part 2: The Pile of Ore object is now transferred to a 'Smelting Factory' refining structure that converts the object to a 'Pile of Ingots' and the Metal resource is again passed on in varying unit amounts. The refined Metal in ingot form can now be used in crafting.

Crafting Note: Resources can be combined during crafting with higher skill levels, allowing 'alloys' – the resource data maintained on the object can be mined and used however the game mechanics require. The underlying game mechanics can sum or average the attributes, or whatever.



AUTO HARVESTING
(i.e. Taun Taun Ranch)



Original Notes

Templates are used for Resource Class Instance (ex. Copper, Reecium) generation.

METAL		*var1*	*var2*	*var3*	*var4*
Copper	(template1)	10	18	66	42
Reecium	(template2)	15	99	10	30

BIOMASS		*var1*	*var2*	*var3*	*var4*
Puka Fruit	(template1)	..	..	..	..
Apple	(template1)	..	..	..	..

Objects have a production value for resources they produce when harvested, refined, or crafted into something else. Objects have consumption values as well.

Copper Ingot	*cur*	*max*	*regen*
PROD ("Copper")	1	1	0

METAL class is used for AI, broad behaviors, etc.
"Copper" is used for display purposes
(templateX) is used for creating new class instances (potentially, 'an unknown metal')
var1..varX are used for characteristics.

Resource Class: Metal
Resource Type: Copper

METAL, IRON, STEEL, CARBONITE
STONE, CLAY, BRICK, CEMENT, MARBLE
CRYSTAL, GEM, LIFE CRYSTALS
BONE, IVORY, HORN
ENERGY (Solar, Radioactivity, Hydroelectric, Geothermal, Fossil, …)
FERTILITY
GLASS?
WOOD
WATER
BACTA
GAS, HYDROGEN, AIR
SPICE (PHARMACEUTICALS)
PLASTIC
VEGETABLE
FRUIT
MEAT
CHEMICAL
HIDE
FUR
GRAINS
RUBBER
SILICON
SALT

VENDORS

Vendors provide players the tools and opportunity to buy and sell items from a secure location, regardless of whether the owning player is online or offline. Other players may purchase goods offered by a Vendor, with credits (money) exchanging hands in a manner dependant upon the venue and city status. Vendors are a major aspect of providing a player-driven economy.

Vision

All transactions are done at player-run vendors. Players are able to hire NPCs or droids to man their storefronts for them; they can configure these Vendors to buy specific types of goods up to specific quantities and at certain prices, and also configure them to sell from their stock at particular prices. Vendors have ongoing costs, of course, making running profitable businesses a sub-game in its own right. Vendors will be customizable in race and appearance.

It will also be possible to query the markets on a given planet; Vendors who have signed up for the planetary commodities market for a fee will have their wares and desired purchases listed on the planetary level so that interstellar trade is facilitated. This permits space traders to easily evaluate the needs of a given planet and make business plans accordingly.

All of this adds up to letting players run the cantina on Tatooine, or Watto's junk shop…

Vision Checklist

- ❑ The play environment should be customizable so that the players can change it to suit.
- ❑ Vendors do not have a weight limit.
- ❑ New strategies should come to light for the player as their play time continues.
- ❑ Player-driven content will be a key element of the game.
- ❑ There will be motives and rewards for short session play.
- ❑ Players need tools to shape their own experiences.
- ❑ We must encourage a sense of player ownership in the world.

System Details

Core Requirements

- ❑ Only the owner of a player venue may hire a Vendor.
- ❑ Vendors are 'hired' through player venue interfaces.
- ❑ Vendors are linked to the player venue where they are hired.
- ❑ Leadership skill may affect the number of Vendors that a player venue operator may hire.
- ❑ Vendors have an initial hiring cost and maintenance costs based on the inventory they carry. (Maintenance cost determination is TBD.)
- ❑ Vendors do not block and cannot be damaged.
- ❑ Vendors may be enabled and disabled, but must be maintained.

- Owners may dismiss Vendors at any time. Confirmation is required.
- The faction of a Vendor is the same as its owner.
- A player venue must support multiple Vendors.
- A player venue has one inventory used by all linked Vendors.
- Vendor interfaces are accessible through the in-game representation of the Vendor – an avatar or item.
- Vendors must support multiple players simultaneously.
- Vendors linked to a venue may list the same item for sale.
- Vendor interfaces must support real-time refresh.
- Vendor interfaces must support transaction locking.
- Vendor interfaces must support skill checks on listed items.
- Vendor interfaces may support hover text on listed items.
- The depiction of items and item prices must reflect the usability and affordability of an item, relative to the customer.
- Customers may sort a Vendor item list by Name, Type, and Price.
- A Vendor may only transfer intangible items to an appropriate container on the customer.
- Vendors may accept both hard and electronic currency, depending on the location of the player venue and the owner's discretion.
- Credits are deducted either from the customer or their bank account. Customers may be given a choice on confirmation.
- The Vendor operator can group items as one unit for sale. Units grouped as a set may optionally be displayed individually, but represented as part of a set (Customers buy the set, not the unit.)
- The Vendor operator can set the Factions from which their Vendor may buy or sell, including +/- percentage charge for each.
- The Vendor operator can set multiple Species from which their Vendor may buy or sell, including +/- percentage charge for each.
- The Vendor operator can set the Guilds from which their Vendor may buy or sell, including +/- percentage charge for each.
- The Vendor operator may add, remove or ban Associations from which their Vendor may buy or sell, including +/- percentage charge for each. Depending on the database load, this may only be relative to the Association the operator belongs to.
- The Vendor operator may add, remove or ban Towns from which their Vendor may buy or sell, including +/- percentage charge for each. Depending on the database load, this may only be relative to the Town the operator belongs to.
- The default Vendor settings for Factions, Species, Associations, and Towns is ALL with 0% surcharge.
- The Vendor operator may provide their own default settings for Factions, Species, Associations, and Towns, to speed up the pricing process.
- Items priced on a Vendor may be given their own settings for Faction, Species, Association, and Town pricing and availability.
- Vendor operators may optionally set up price ranges for individual and bulk item purchases. This system may include an integrated interface for tiered pricing, linear pricing, and pricing curve.

- Vendor operators may customize their Vendors appearance. Vendor customization should never change the ID in such a way as to remove its linkages to other game systems.
  - Species
  - Name
  - Clothing
  - Greetings (mad-lib style interface)
  - Optional in-game e-mail address.
- Vendor operators may relocate their Vendor when it is not in use. Vendor relocation should never change the ID in such a way as to remove its linkages to other game systems.

Intangible Items

Players may carry objects, such as crates, which contain one or more units of one intangible item type. Example: A player may carry a crate containing 50 'units' of 'spice'. Intangible items such as spice, metals, or biomass can only be transferred between Vendors, crates, vehicles, certain structures, etc. Transfer of said intangible items between structures may take a matter of seconds.

Currency

Hard currency, credits chits, are used with Vendors placed on backwater planets, and are held by the Vendor. Optionally, electronic currency may be used with Vendors in cities connected to the Imperial Bank, with credits being added and deducted directly from players' bank accounts.

Display Cases

Special shop display cases may reflect items for sale on Vendors.

Vendor Item List

The unit price of an item must display in red (or perhaps a user configurable color) if it is not affordable by the purchaser.

Items that are not usable by a player-buyer will have a red background. An additional feature might provide checks on the character's inventory items. Example: A buyer-character may purchase and use a grenade launcher, but it won't work with his blaster – therefore, the unit's background may be yellow.

Other Services

Vendors may provide services such as power cell recharging and healing.

Vendor Status

Owners may temporarily disable and re-enable their vendors at any time. Per Diem maintenance fees still apply. Disabled Vendors should look markedly different to players.

Vendor Dismissal

Vendor operators may dismiss Vendors at any time. Confirmation is required.

Grouping Items

Provide the ability to group and price multiple items into a set, but also show the items individually during searches, displayed in such a way as to indicate a piece is part of a larger set.

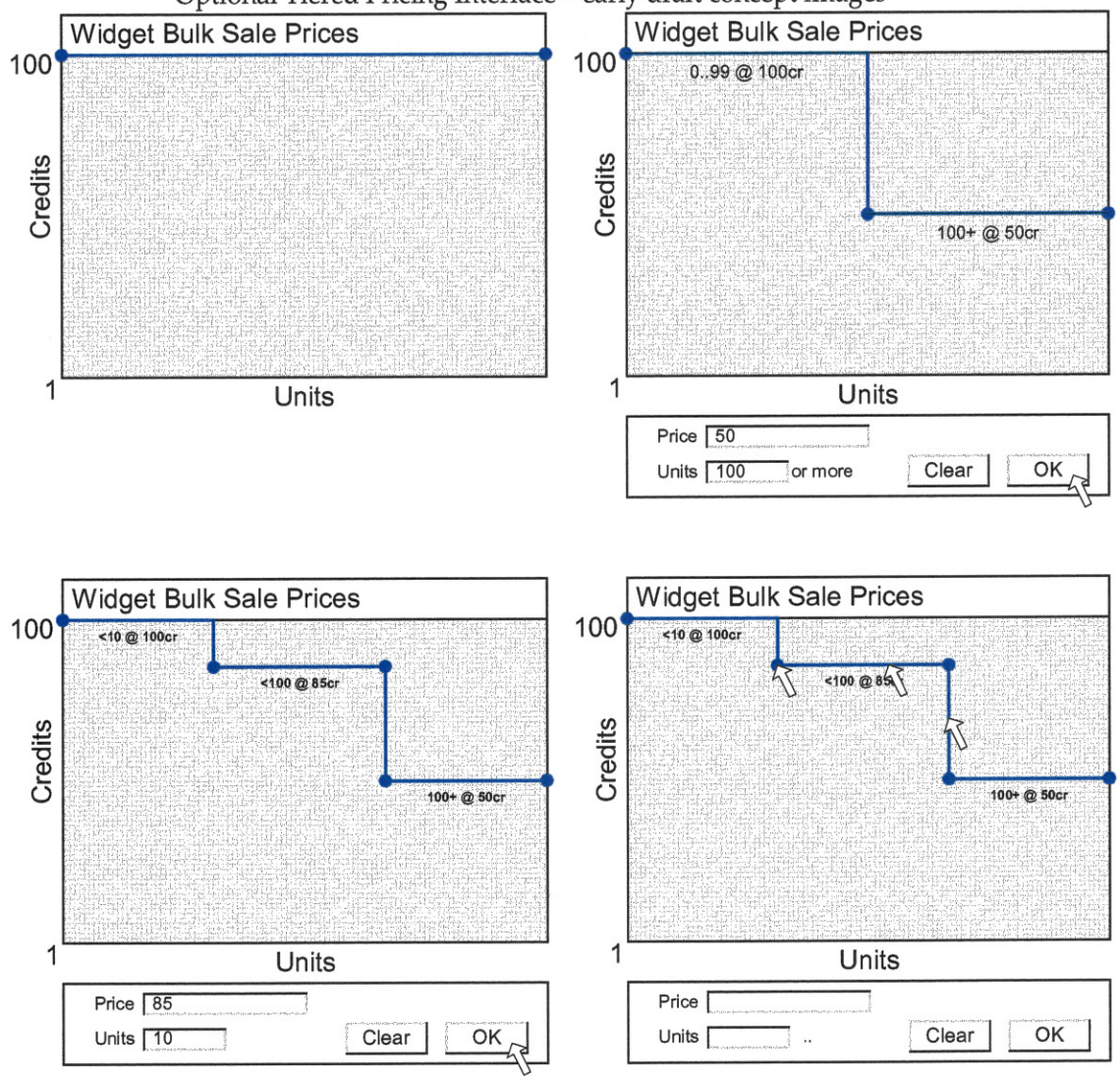
Features & Future Requirements

- ❑ Price-to-demand ranges for Vendor sales/purchases, utilizing prices from the commodities market. (Can you say price controls?)
- ❑ Haggling
- ❑ Vendor Referrals or Vendor-ring
- ❑ Vendor Customization 2
    - o Voice
    - o Attitude & Personality (Vendor Rules) such as more mad-lib style selections for greetings, special treatment of character attributes (species, faction, guild, reputation, etc.), including price enhancements.
- ❑ Maintain a buyer list and allow e-mail responses.
    - o FIFO
    - o Stored by purchase price or quantity
- ❑ Coupons
- ❑ Feature: A character may report a Vendor to his faction or town either favorably or unfavorably. Vendors with a high number of unfavorable reports will be reported to a higher authority. In the case of a faction report, this may result in fines against the owner.

  Example: Bob's vendor is selling illegal weapons in a region controlled by the Empire. Several characters allied with the Empire report Bob's vendor and Bob is fined 1,000 credits and all weapons are confiscated from the offending Vendor.

Interface

Optional Tiered Pricing Interface – early draft concept images



COMMODITIES MARKETS

Star Wars Online is being built as a game that's going to be huge. It will have giant communities spread over large distances. These communities will be composed of players doing all the things would expect of them: talking, killing, traveling, and... trading. With so many people so spread out trying to trade things, we can make things easier on them by giving them a system that streamlines the process and enables them to trade remotely. Enter the Commodities Market system. A system designed to not only enhance local trade, but also enable a cross-boundary and interstellar economic connection with distant communities, weaving the player-driven economy into a more cohesive unit and buffering the effects of isolated pockets of capitalism.

Vision

A commodities market is part of our original vision for the game, adding increased depth to a system where player shopkeepers, miners, harvesters, farmers, and builders can all sell their wares to people outside what could be a choked or non-friendly local market. This system provides additional channels and reasons to contact and deal with people outside your immediate vicinity, which aids in growing the community. At the same time it provides a whole addition level of trade to help insure that those unable to unload their product locally will be able to find somewhere to do so.

Some of the appropriate parts if the original SWO game vision document are included here:

Issues for Newbies

- The game must be accessible to a broad audience.
- It should have an intuitive user interface. If the choice for initial interface is between flexibility and ease of use, we will choose ease of use, and make the flexibility an option.
- It should be possible to play a satisfying game session in less than an hour.

Retention

- New strategies should come to light for the player as their play time continues.
- Player-driven content will be a key element of the game.
- There will be motives and rewards for short session play.
- We will explicitly reward non-advancement based ways of playing the game.

Social interaction

- Players need tools to shape their own experiences.
- Amy Jo Kim's principles for community building:
    - We will design for a range of roles.

System Details

There are some systems that have to be in place for the commodities market system to work properly. There are other systems that we can add in order to get more bangs for the buck out of this system.

Core Requirements

The commodities market system will require a certain level of basic functionality to be built before it can be a usable part of the game. Among these system capability requirements are the ability display filterable sales and request lists, the ability for players to post and retract items and item requests from the listing, to comment on a pre-existing list entry, to bid on items using an auction system, and to purchase items remotely.

The listing

The commodities market itself is a filterable, sort able, searchable listing of items with several different levels of detail available. The list displays items and requests for items that player characters have placed hoping to find buyers or sellers outside the smaller group of people that would be local to their storefront.

- Filterable
- Searchable

Before the player can look at items in the commodities market, they must limit what they want to see by doing a search for items they are interested in, or using filters to narrow down the amount of stuff that the market initially presents to them.

Filtering is one method that the player can start their romp through the commodities market, by selecting what category of goods to look at and perhaps on what scale to list things; stellar system, planet, or town. To list things by filtering is to build your list by excluding the things you don't want to see. By default, the player filters out either item requests or items for sale, although they have the option to display both types of entry at the same time. Filtering usually builds better lists for players that simply want to browse.

Searching is another method a player can begin their surfing of the commodity market listing. In this method, the player works through inclusion by selecting what they would like to see. Multiple criteria can be selected to search for, simultaneously. Examples include viewing everything for sale from a particular seller, fitting within a particular category, and falling within a certain price-range.

The filtering and search mechanics are smart in that if some options are unavailable for a geographic region, then they will be ghosted out and unselectable. If high-lighted, their 'tool tip' will tell the player that no such commodities are listed for their selected area.

Listing entries

Once the commodities list's initial population is generated, it is displayed to the player in either concise or detailed formats.

In the list's concise list format, single-line entries are shown for each item, with all of the applicable data shown in different columns that can be clicked on to sort in ascending or descending order by that column, much like windows explorer. By clicking on multiple column headers you can perform more detailed sorts. For example, you could click on 'date/time posted' and then on 'seller' to see the listed by seller, with each seller's block listed in order of date/time it was posted. The list remembers the last sort you performed and will maintain that order as new items are introduced, and on your subsequent visits to the commodities market. The listing scrolls up and down to show additional entries with the number of entries per page being just a few to tons of them, based upon player-set options. Items whose listings expire within the next twenty-four hours are displayed in bold. Items whose firm price or current auction price are over the amount of funds in the player's bank account are displayed as ghosted. Things listed in concise format include the item's name, asking price, date/time posted, and current location. Each of the items in these columns can be alternate-selected to see additional information. If you were to right click on a seller's name, you would see information about that seller that they have posted, along with a quick list of the names of other items they are selling. If you were to right-click on an item's price, you could see whether or not it was a firm price or an auction situation, and if it were, some notes about the recent bid history for that item. To see even more information about each entry or a particular one, the player can select the item they are interested in, or switch the entire listing over to it's detailed info format.

In the list's more detailed format, each column of information is presented with additional enhancement as well as further information that wasn't available in the concise listing. The further information could include seller's comments, notes on the original builder, the site of its construction, what elements were used in its construction, and other details. If the player selected a particular item entry in the concise listing, then this entry and all of its details is the only one presented at once, and <Previous Item> and <Next Item> buttons are present at the bottom of the item's entry, allowing you move forward or backward in the main listing from the detailed single-entry view. If the player arrived at the detailed entry format by choosing the display the concise list that way, then all of the entries from the concise listing are stacked on this page, scrolling up and down, with a player selectable number of entries per page ranging from just a few to tons of them.

Market statistics

Beyond listing individual items, the commodities market can display the average selling prices for differing categories of commodities in different areas. It can also display a history of costs of a period of time. The average pricing information gives speculative traders such as merchant ship captains the ability to better choose what location might be the best place to take their wares. This mechanic also attempts to introduce a bit of the original Privateer-style speculative trading into the game, although you are still depending upon player-run vendors to purchase the goods you are attempting to trade, instead of being able to merely dump them on an NPC economy.

Purchasing items off the market

Anyone can purchase things off the commodities market depending on local regulations and communication capabilities. Their access will be limited only by local and factional governmental restrictions and by the presence or lack of trade and communication-related municipal facilities. These restrictions may not come to bear at all on a buyer, or they may limit them to only being able to see items for sale by sellers in their own town.

Once a player that is interested in purchasing an item has located it, they must view the item's detailed-format record. The actual purchase procedure will vary depending on whether the seller has set a firm price or has put the item up for auction.

If the purchase price is firm, the buyer selects 'purchase' on the items detailed-format record.

If the item is up for auction, the player enters a maximum bid amount larger than the amount currently shown as an active bid, and submits it. After the bid is submitted, it is checked against the highest-value bid currently registered for the item. If the bid the buy just registered was larger than that of the previous highest bidder's maximum bid, then the item's current bid is moved to the nearest whole credit above the previous highest max-bid. If the buyer's max bid was below the previously registered highest bid, then the item's current bid value is moved to the nearest credit higher than the bid they just placed. The item's record is updated immediately on the player's screen after their bid is registered so that they can see what the result was.

When a player has successfully purchased an item, the funds for the purchase are deducted from their account and held in escrow until they take delivery on the item. If the transaction is cancelled by the seller or expires before the item is delivered to the buyer, then the funds are returned to the buyer's bank account.

At this point, it's up to the seller to log on and notice that a transaction is pending. They can either accept or deny the transaction. If they accept, then they must arrange for shipping of the item to the buyer. An option on the transaction acceptance page offers to take the seller straight to a transportation mission-generation screen. Once at this screen, the blanks for item type, mission expiration date, item destination, and most others are all automatically filled in for the seller, using the datasets from the buyer's, seller's, and item's information records for source information. The seller can accept the mission and post it as is, make modifications and then post it, or cancel it and fill out his own at a later time.

Once the item arrives at the buyer's location and comes into their possession, the money held in escrow is automatically released to the seller. The transaction is complete.

Posting items for sale

Sellers must have purchased a commodities market seller's-license from the Merchant's Guild before they can post things for sale. Membership in the merchant's guild is not a required prerequisite for such a license, but it does cut the cost of the license by a lot. Licenses can be purchased at various levels that control whether it is volume-limited or quantity limited. A volume-limited license allows a certain number of items to be posted at one time such as 1, 2, 5, 10, 15, 20, or 30 items. The level of license available to a seller depends on the merchant skill levels and payment of higher fees. If a seller tries to post an additional item after reaching their limit, they are warned and asked if they wish to de-list their earliest-listed item. Volume-limited licenses have an expiration date on them that requires their renewal on or 30 days before that date or any items the seller has on the market will be de-listed. A quantity-limited seller's license is use-based and allows only a single item to be listed on that license EVER. To post another item, the seller would have to purchase another license. Quantity-limited licenses are slightly cheaper than volume-limited licenses and are targeted at people that wouldn't be higher-volume posters.

To place an item for sale on the commodities market, a player with a with commodities market seller's license must log onto the commodities market using their PDA and choose which item or group of items in their inventory that they wish to put up for sale. For every item or group of items they put up for sale, they are presented with a form to fill out that is customized for that type of item they have selected to sell. A database entry for a weapon might use a slightly different form and have different categories for entry than a mound of ore or a spaceship.

For each unit for sale entry that sellers place on the commodities market, they must fill out all of the required entries and optionally fill any of the remaining entries. Several examples of required entries include purchase type (set price or auction), asking price, and length of posting. An item can never be posted for more than 30 days and is automatically de-listed after that time period has expired. Some entries are automatically entered with no changes possible, these include 'posted by' and 'posted on <date/time>. For any additional information about the sale item the seller wishes to make but for which no appropriate data section is available, the notes should be put in the 'comments' section. When the player selling the item thinks they are done creating the item record, they select finish and are immediately presented with the completed form displayed in detailed listing format. At this point they are asked to confirm their desire to post the record on the commodities market. If they say no, they are given the opportunity to make additional changes to the record, or to cancel it. If they say yes, then a unique identity number is generated for the entry and it is posted.

Posting item requests

An item request is the kind of entry a potential buyer posts when they are interested in buying something that they haven't seen already posted for sale on the commodities market. They work much like 'for sale' postings except that they work from the opposite direction. A buyer posting a request must obey all the item post number and licensing limitations that a seller does. A potential buyer looking for a particular item would select what category of item they were looking for as well as fill in all the same item information sections that would be filled out if they were posting an item for sale,

including a request expiration date. Any notes that don't fit in other categories of the record are recorded in the 'comments' field. When the buyer is done, they select <finished>. A completed version of the record is then displayed in the list's detailed format, and a prompt comes up asking if the player is sure. If they aren't they may choose no and make modifications to the form or even cancel it entirely. If they are satisfied, they should choose yes, at which point a unique ID tag is assigned to the record and it is posted.

If a person looking of item requests would like to sell such an item, they drag the item onto the page to fill in its vital statistics, manually fill in a price, item location, any comments, and submit it to the prospective buyer. The record is then flagged for the buyer's attention and brought up the next time they log on to the commodities market. If the buyer doesn't agree with price or other details, they can change it and send it back, or simply deny it. If they agree with the terms, they choose <purchase> and the process proceeds like purchasing any other item off the commodities market.

Features & Future Requirements

While all the system mechanics listed under the 'core requirements' section will give us an operational commodities market system, a couple of extra systems will really make it shine.

Self policing… Seller reputation

To aid potential buyers in being wary of individuals that falsify some of their comments about items, buyers can lodge complaints against sellers they have purchased from. The seller's sales-reputation is displayed under their seller-information column. To file a complaint, a buyer has to have completed a transaction with the seller they wish to complain about, and then gone to their seller-information page, clicked on 'complain' and filled out the comments section. By the same token, a buyer that has completed a pleasant transaction can fill out a kudo for the seller. Buyers cannot file complaints or kudos for sellers if they share the same Association or player-run government. This is an effort to keep down the number of false complaints and kudos.

Store connectivity

A member of the merchant's guild has the option to purchase a 'store market license'. This allows that seller to not only flag any items in the store they want to have automatically listed on the commodities market for them, but also have a store-front on the commodities market, which would be listed under their seller-information page and on a virtual mall that lists just store-fronts. A storefront page is different from the normal seller-information page in that it is displayed in additional locations and has the option of having additional information placed on it. A seller with a store market license is still limited in the number of items they can place on the market, but the number is significantly higher. If they are in danger of over-reaching their item posting limited, they are warned and asked if they wish to de-list their earliest-posted item.

Interface

Most of the interface for the commodities market system is borrowed from other systems in SWO. We will need large multi-columned list boxes with filter-by-column capability, mission generation applications, and check boxes.

Assets Required

Icons for contract state such as 'Pending', 'Seller Attention', 'For Sale', and 'Goods Requested', and pictographs indicating a group of items.

Art for items sold individually should be their normal in-game art.

Revision Log

Rev 1.0 – Initial generation of document.